

Fig. 1

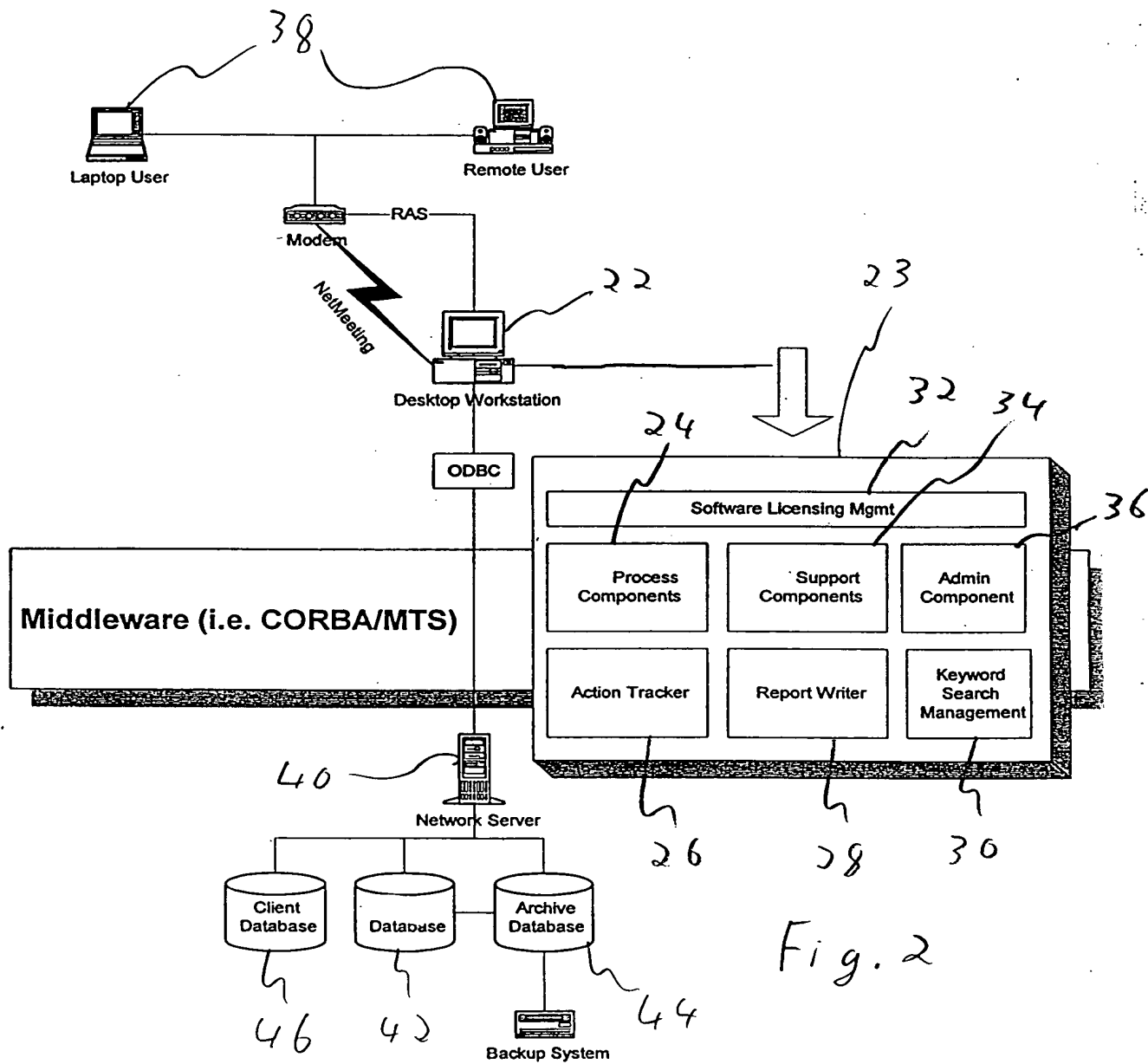
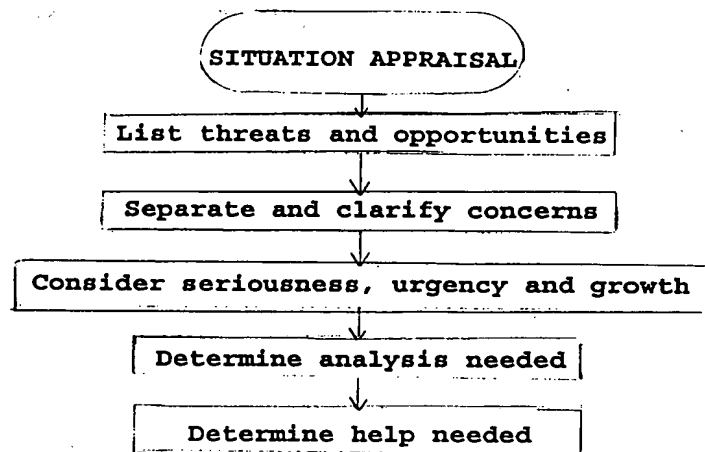
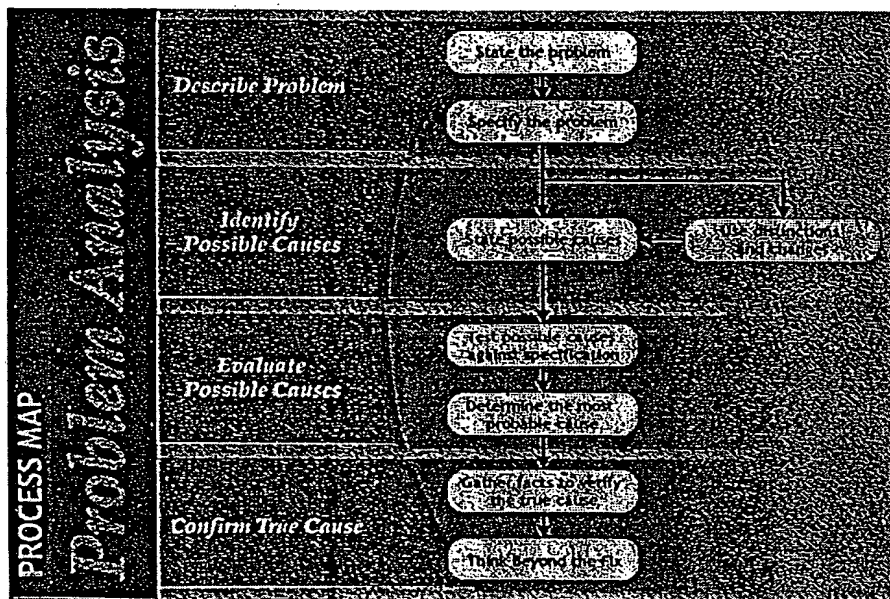


Fig. 2



50

Fig. 3



52

Fig. 4

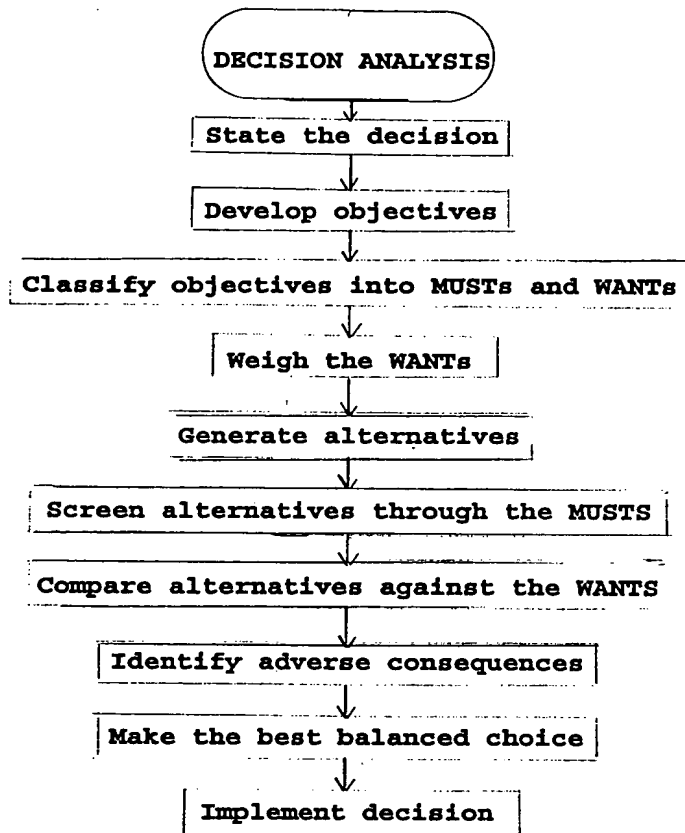


Fig. 5

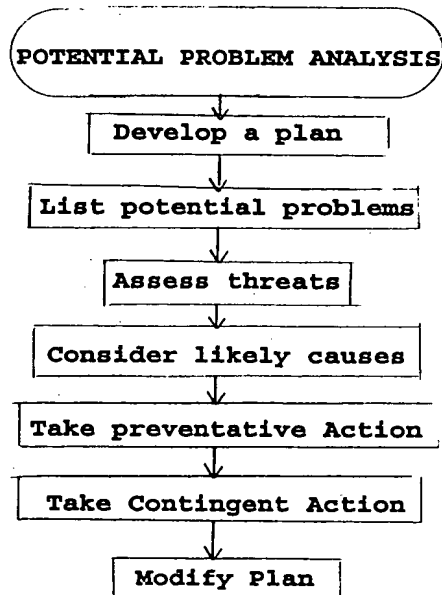


Fig. 6

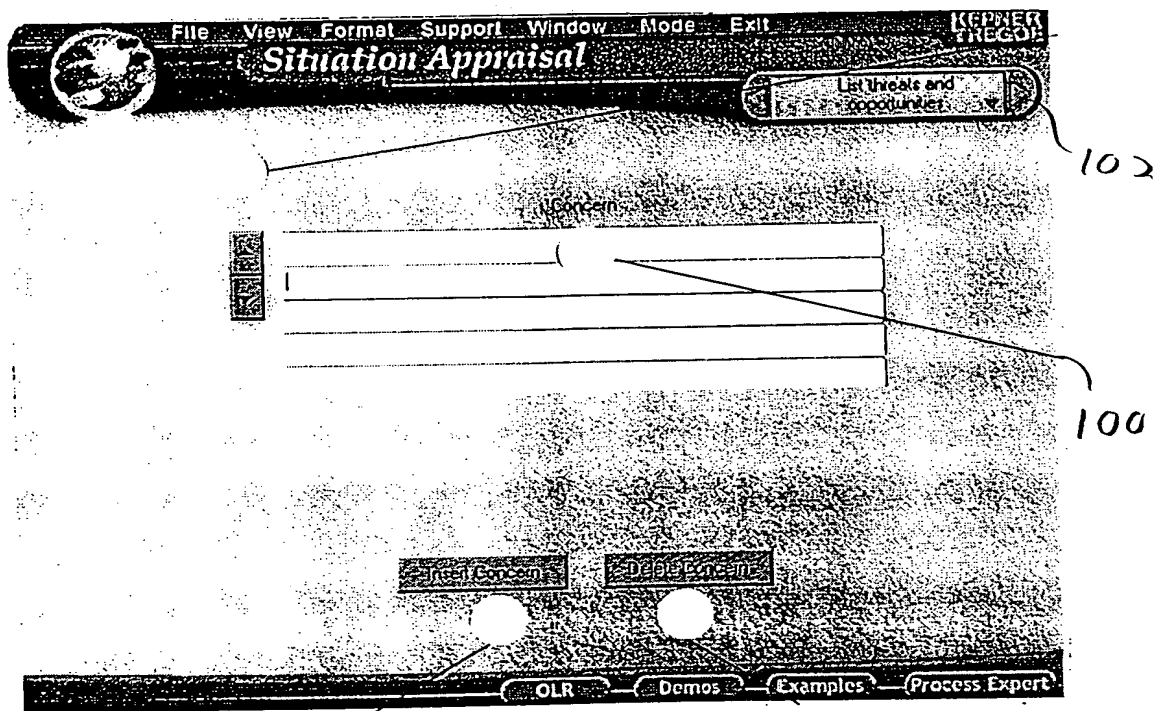


Fig. 7

File View Format Support Window Mode Exit

Situation Appraisal

Separate and clarify concerns

Concern

102

104

Support Concern Debriefing

OLR Demos Examples Process Expert

Fig. 8

000000-00000000

File View Format Support Window Mode Exit

Situation Appraisal

Consider seriousness, urgency, and growth

104 112 106 108 110 102

Concerns	Priority	Seriousness	Urgency	Growth
	Medium	Medium 116 126	Low 118 128	Medium 120 130
	High	High	High	Medium
	Medium	High	Medium	Medium
	Low	Low	Medium	Low
	High	High	High	High

112

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Fig. 9

File View Format Support Window Mode Exit

Situation Appraisal

Determine analysis needed

Concerns	Priority	Seriousness	Urgency	Growth	Process
	Medium	High	Medium	Medium	Situation Analysis 142 144
	Med	Medium	Medium	High	Decision Analysis
	Low	Medium	Low	Low	Problem Analysis
	Medium	Low	Medium	High	Situation Analysis Problem Analysis Decision Analysis Situation Analysis Potential Problem Potential Opportunity
	High	High	High	High	

140

OLR Demos Examples Process Expert

146

Fig. 10

File View Format Support Window Mode Exit

Situation Appraisal

Determine help needed

Concerns	Priority	Seriousness	Urgency	Growth	Process
	Medium	High	Medium	Medium	Problem Analysis
	Medium	Medium	Medium	High	Decision Analysis
	Low	Medium	Low	Low	Problem Analysis

154 Action 156 Who 158 When 160 Notes 162 Status 164

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Fig. 11

File View Format Support Window Mode Exit

Problem Analysis

What should be happening?

What is actually happening?

Is the cause known? ☒ Yes ☐ No

What tells you the cause is unknown?

What is the Object?

What is the Deviation?

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200

202

210

204

206

208

Fig. 12

File View Format Support Window Mode Exit

Problem Analysis

Object: Deviation:

Problem:

What object?		
What deviation?		
Where geographically?		
Where on the object?		
When first?		
When since?		
When in the cycle?		
How many objects?		
What is the size?		

☒ Collapsed ☐ Expanded

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214

222

212

216

220

218

Fig. 13

[illegible]

File View Format Support Window Mode Exit

Problem Analysis

KEITH TRELOAR

Object Deviation

Problem

	Object	Deviation	As Note	Disjunction	Choice
What object?					
What deviation?					
Where geographically?					
Where on the object?					
When first?					
When since?					
When in the life cycle?					

Collapse Insert As Note Direct Disjunction Insert Choice

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212

230

228

216 218 224 226

Fig. 14

File View Format Support Window Mode Exit

Problem Analysis

Object Deviation

Problem: [] []

What object?

Possible Cause

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3134

Fig. 15

232

File View Format Support Window Mode Exit

Problem Analysis KERNER TREGOE

Test possible cause against specification

Problem: Object Deviation

Is Is Not Conclusion Assumptions or Notes

What object?			only if	
What deviation?			yes because	
Where geographically?			only if	
Where on the object?			yes because	
When first?			no because	

Alter Assumption

OLR Demos Examples Process Expert

216

218

244

Fig. 16

File View Format Support Window Mode Exit

Problem Analysis KERNER TREGOE

Determine the most probable cause

Problem: Object Deviation

Probably Possible Causes Assumptions

MPC

None

No assumptions necessary.

No assumptions necessary.

MPC High Medium Low

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Fig. 17

File View Format Support Window Mode Exit

Problem Analysis

Object: _____ Deviation: _____

Problem: _____

Possible Cause: _____

Assumptions: _____

236

246

248

250

252

254

256

Notes

Action

Who

When

OLR Demos Examples Process Expert

Fig. 18

File View Format Support Window Mode Exit

Problem Analysis

Object: _____ Deviation: _____

Problem: _____

Confirmed True Cause: _____

What other damage could this create? _____

260

Notes

Action

Who

When

OLR Demos Examples Process Expert

Fig. 19

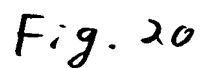


Fig. 20

File View Format Support Window Mode Exit

Decision Analysis KEPPNER TREGOE

Develop objectives

Decision Statement

Objective

Notes

Insert Objective

OLR Demos Examples Process Export

308

Fig. 21

File View Format Support Window Mode Exit

Decision Analysis KEPPNER TREGOE

Develop objectives

Develop objectives for MUST and WANT

Decision Statement

Objective

Notes

Priority

WANT
MUST
WANT
MUST
MUST
WANT
MUST

Insert Objective

OLR Demos Examples Process Export

308

Fig. 22

008210-28226760

File View Format Support Window Mode Exit

Decision Analysis

KEEPER
THECCE

Decision Statement

WANT Objectives Weight Notes

5

8

0

Insert WANT Objective

OLR Demos Examples Process Expert

316

314

320

318

304

306

Fig. 23

File View Format Support Window Mode Exit

Decision Analysis

KEEPER
THECCE

Decision Statement

Alternative Objective Notes

5

Insert MUST Objective

Insert Alternative

Insert WANT Objective

OLR Demos Examples Process Expert

326

322

330

324

332

328

Fig. 24

File View Format Support Window Mode Exit

Decision Analysis

KEPNER TREGGEE

Decision Statement

Alternative

WANT Objectives

5	340	2	346	0	6
8	344	6	0	0	6
3	6	0	0	0	4
TOTAL	Tentative Choice	76	0	0	90

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Fig. 26

File View Format Support Window Mode Exit

Decision Analysis

KEPNER TREGGEE

Decision Statement

Alternative

II	Probability	Then	Seriousness	Notes
	MEDIUM		MEDIUM	
	LOW			
	MEDIUM			
	HIGH			

OLR Demos Examples Process Expert

Fig. 27

008240-234260

File View Format Support Window Mode Exit

Decision Analysis

Make the best balanced choice

Decision Statement **370**

Decision Alternative **370**

Score **90**

Previous
Select
Next

Want Objectives **324**

Weight **5**

Notes **326**

Insert WANT Objective **366**

Probability **353**

Desirability

MEDIUM
LOW
MEDIUM
HIGH

Insert Desirability **368**

OLR Demos Examples Process Expert

Fig. 28

File View Format Support Window Mode Exit

Decision Analysis

Implement decision

Decision Statement

Final Decision

Notes Action Who When

OLR Demos Examples Process Expert

372

374

382

376

378

380

Fig. 29

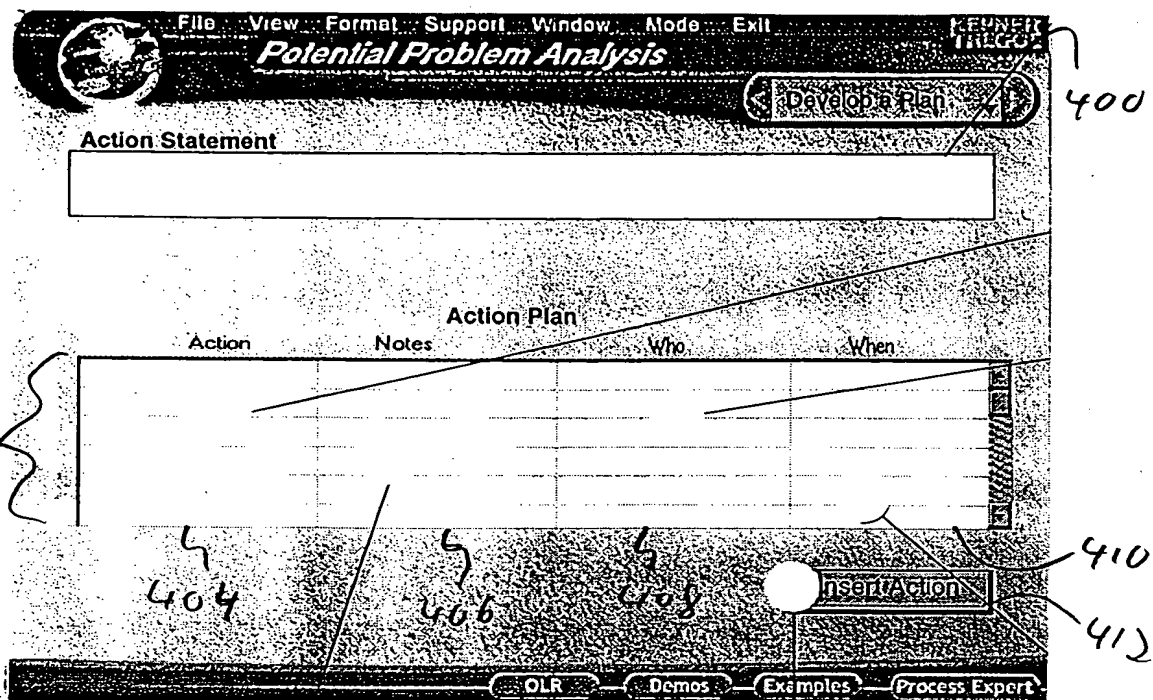


Fig. 30

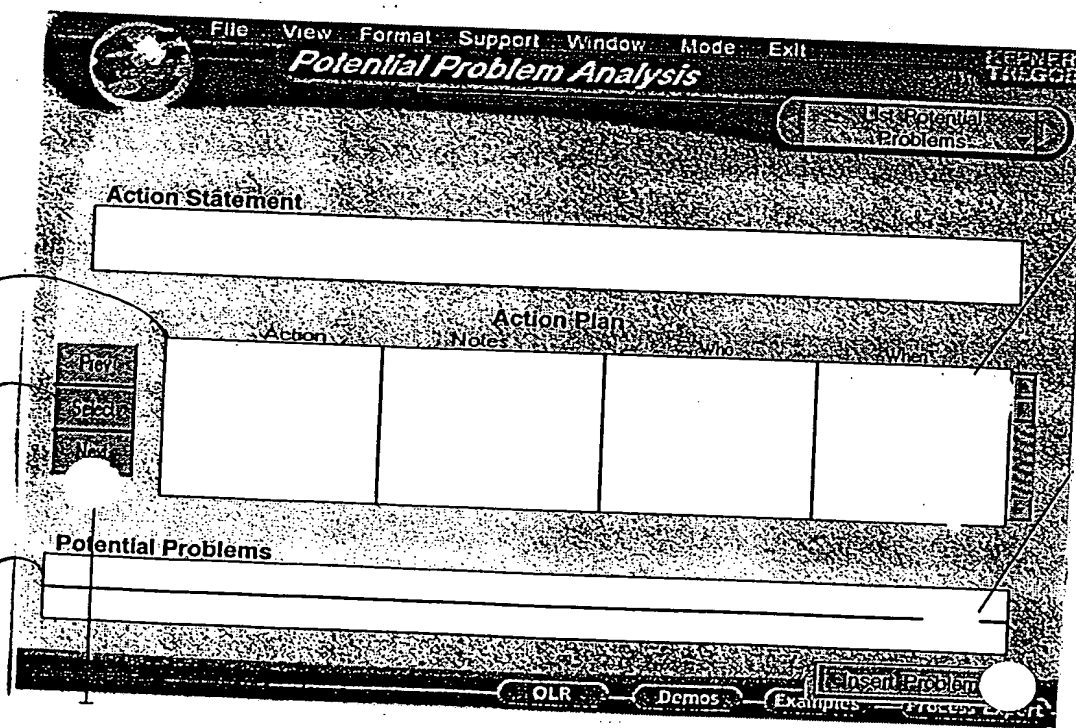


Fig. 31

File View Format Support Window Mode Exit

Potential Problem Analysis

Access Threats

Action Statement

403

404 Action

406 Action Plan

408 Who

410 When

414

416

422 Priority

416 Potential Problems

418 Probability

420 Seriousness

424

Consider Problem

OLR Demos Examples Process Expert

Priority	Potential Problem	Probability	Seriousness
High, Medium, Low		High, Medium, Low	High, Medium, Low
High, Medium, Low		High, Medium, Low	High, Medium, Low
High, Medium, Low		High, Medium, Low	High, Medium, Low

Fig. 32

File View Format Support Window Mode Exit

Potential Problem Analysis

Consider Likely Causes

Action Statement

403

404 Action

406 Action Plan

408 Who

410 When

414

422 Priority

406 Likely Causes

426 Potential Problem

428 Likely Cause

430 Probability

432

434

436

438

Consider Likely Cause

OLR Demos Examples Process Expert

Priority	Potential Problem	Likely Cause	Probability
High, Medium, Low			High, Medium, Low
High, Medium, Low			High, Medium, Low
High, Medium, Low			High, Medium, Low

Fig. 33

File View Format Support Window Mode Exit

Potential Problem Analysis

Taking Preventative Action

Action Statement

Action Plan

Action	Notes	Who	When

Preventative Actions

Priority	Potential Problem	Likely Cause	Preventative Action

Insert Likely Cause

Insert Preventative Action

OLR Demo Examples Process Expert

Fig. 34

File View Format Support Window Mode Exit

Potential Problem Analysis

Taking Contingent Actions

Action Statement

Action Plan

Action	Notes	Who	When

Contingent Actions

Priority	Potential Problem	Contingent Action	Trigger

Insert Contingent Action

Insert Trigger

OLR Demo Examples Process Expert

439 442

440 444 Fig. 35

446

Fig. 36

Fig. 37

Fig. 37

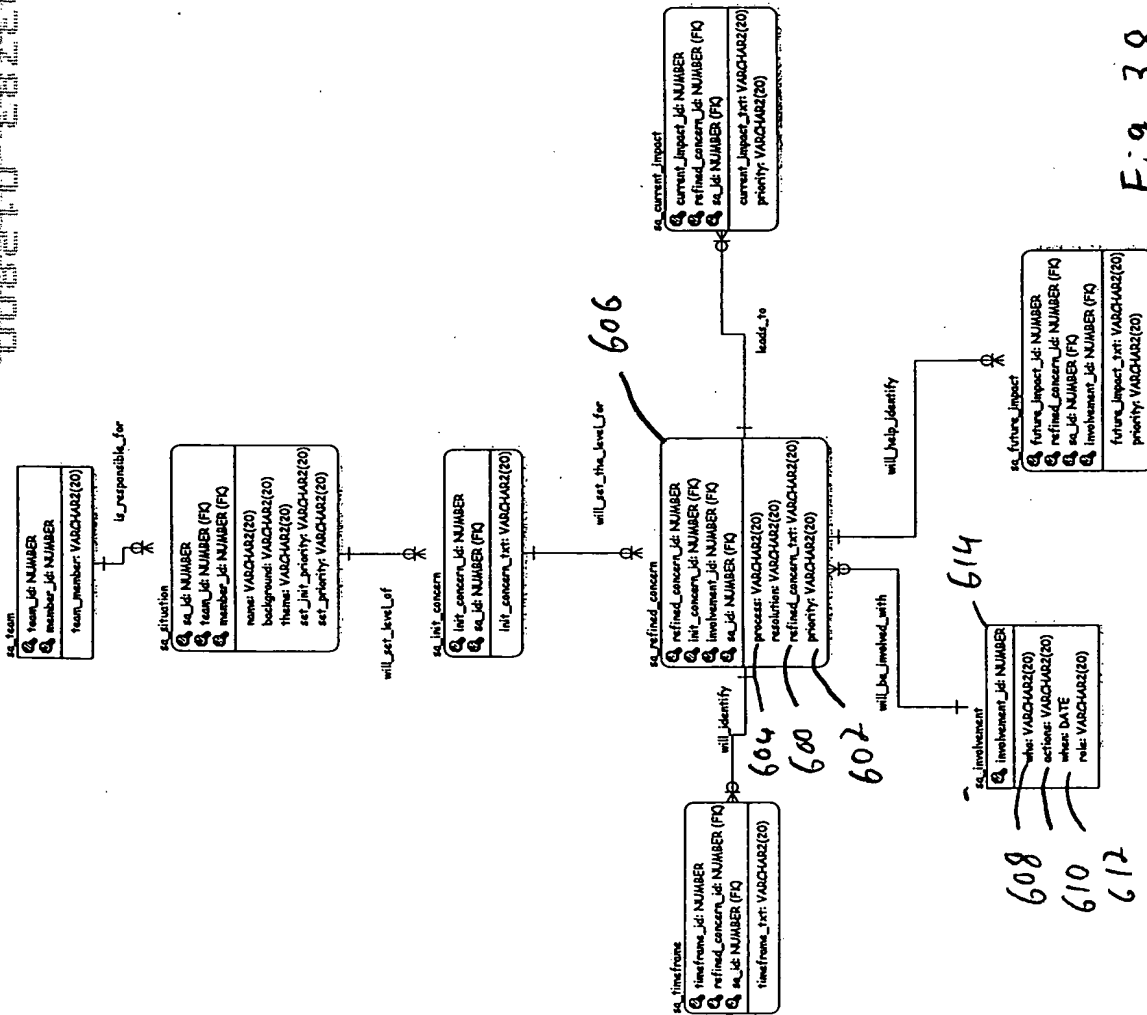


Fig. 38



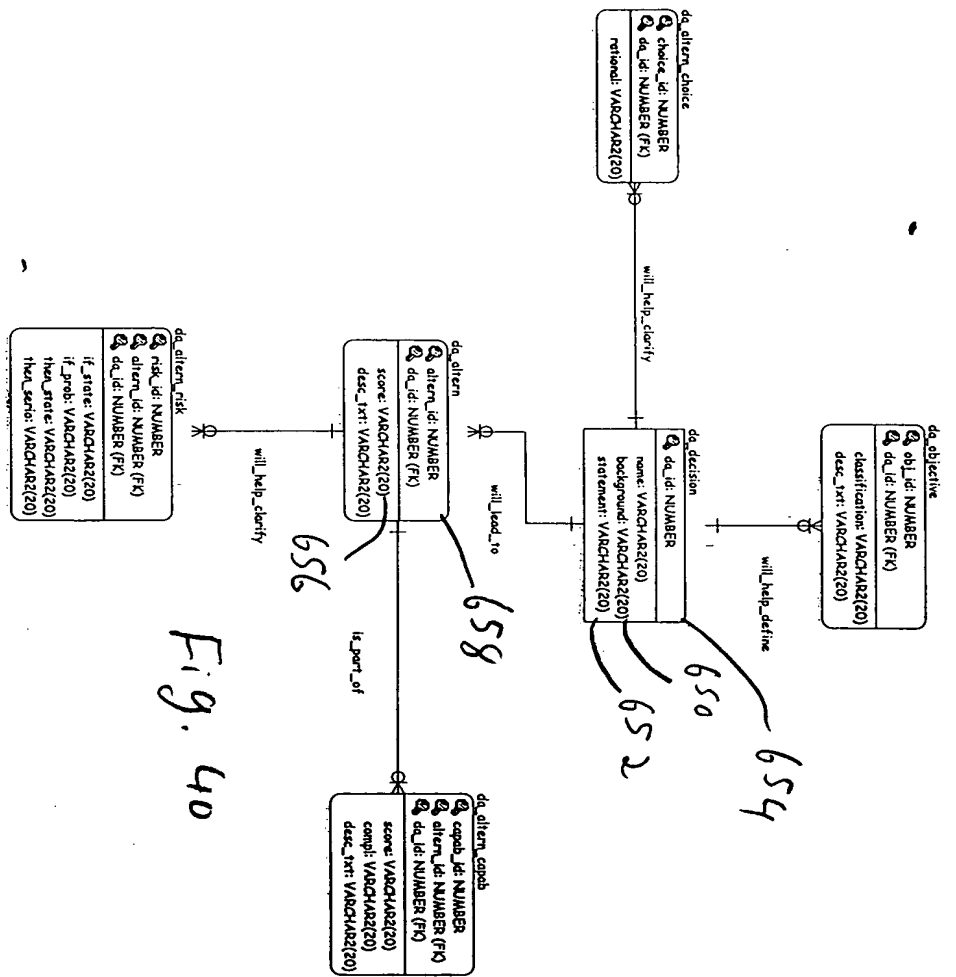
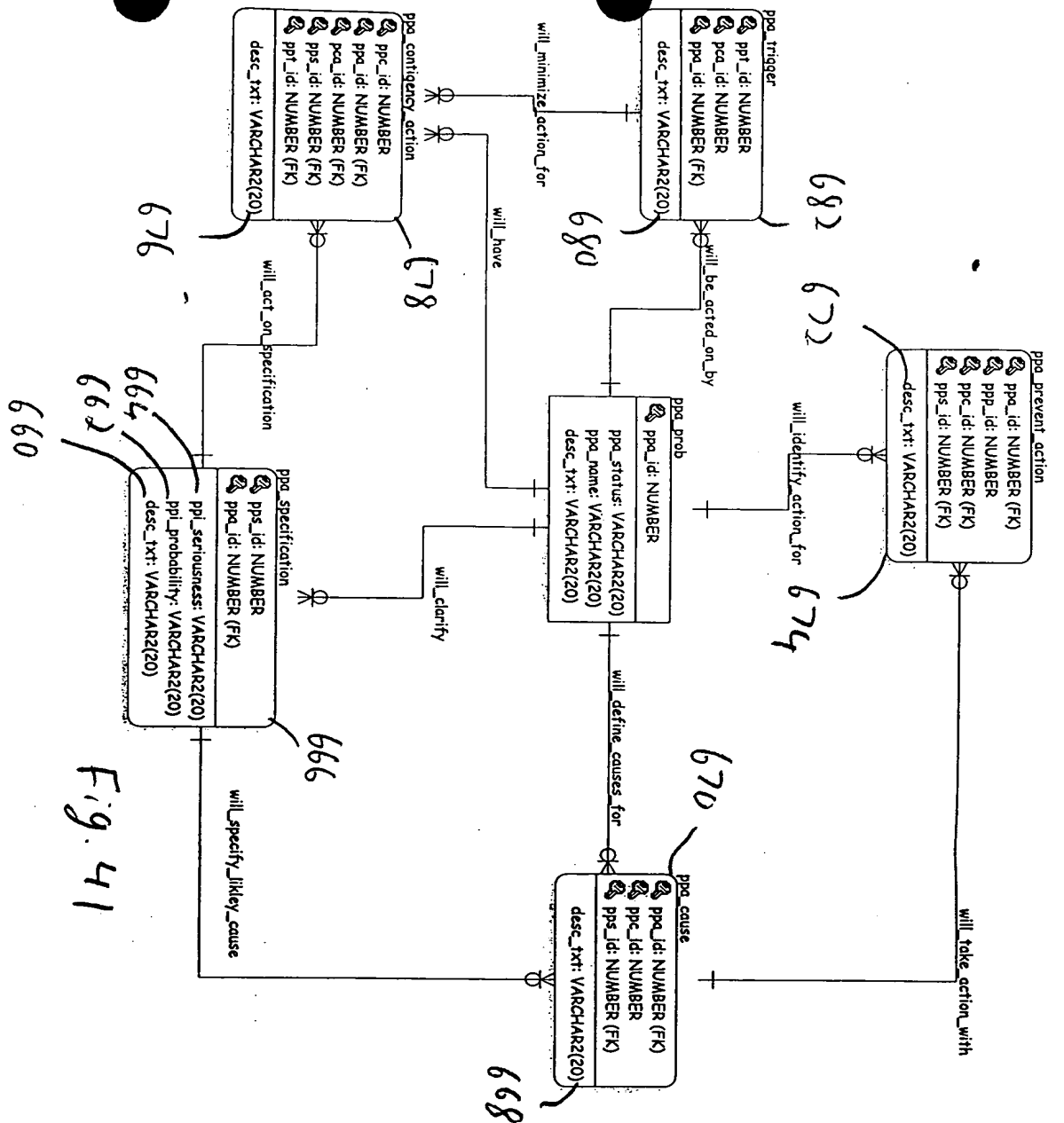
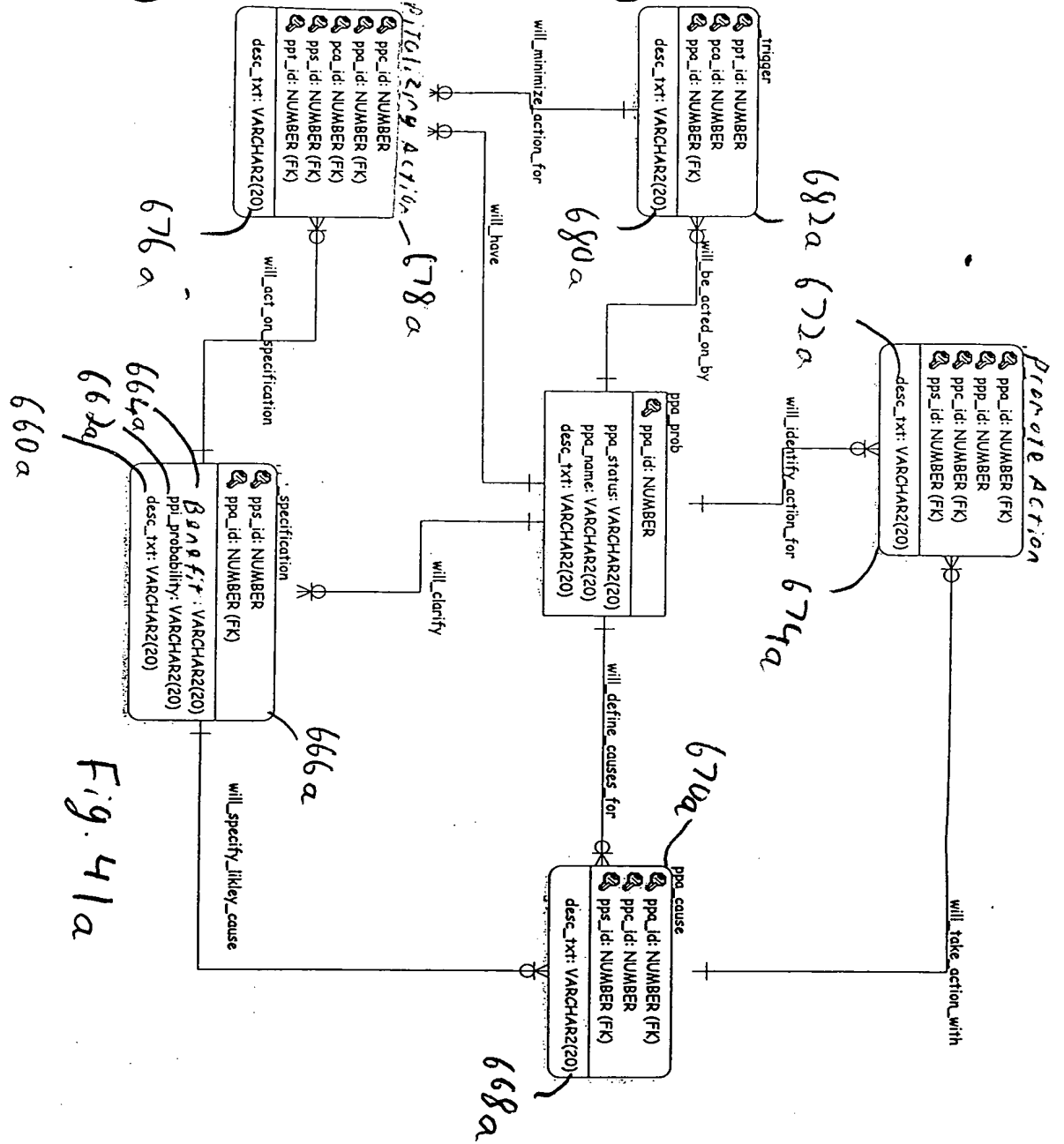


Fig. 40



00403783-012300



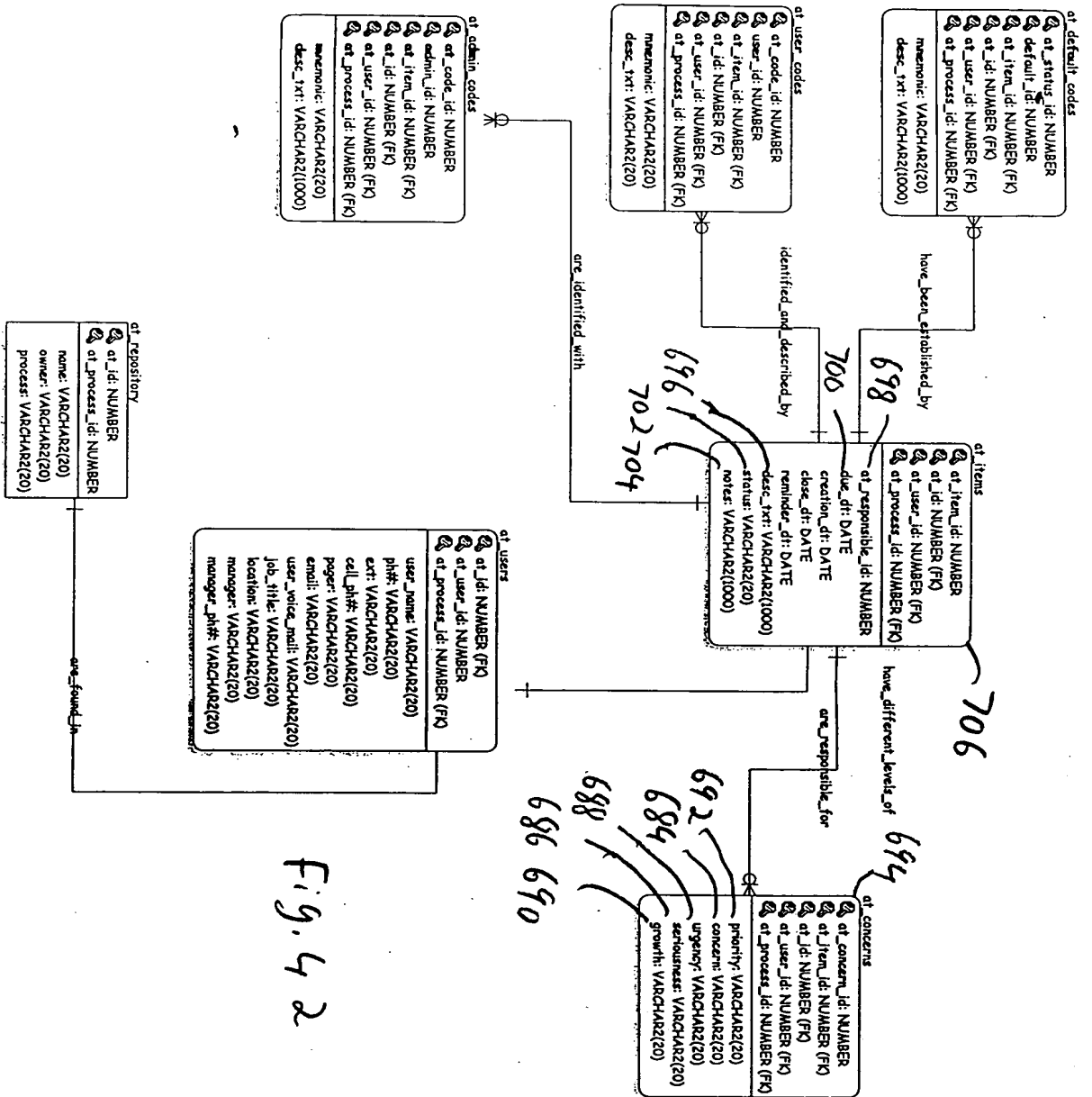


Fig. 4 2

00493783-042800

K-T Process Case
K-T Process Case Type
K-T Process Case Name
K-T Process Case Identification
K-T Process Case Statement
K-T Process Case Background
K-T Process Case Background Edited
K-T Process Case Status
K-T Process Case Action Tracker Repository Identification
K-T Process Comments
K-T Process Case Date-Time Stamp
K-T Process New()
K-T Process Open()
K-T Process Save()
K-T Process Save As()
K-T Process Edit()
K-T Process Delete()
K-T Process Close()
K-T Process Set Status()
K-T Process Get Status()
K-T Process Write K-T Process Statement()
K-T Process Read K-T Process Statement()
K-T Process Set K-T Process Statement()
K-T Process Get K-T Process Statement Edited()
K-T Process Write K-T Process Background()
K-T Process Read K-T Process Background()
K-T Process Set K-T Process Background()
K-T Process Get K-T Process Background Edited()

800

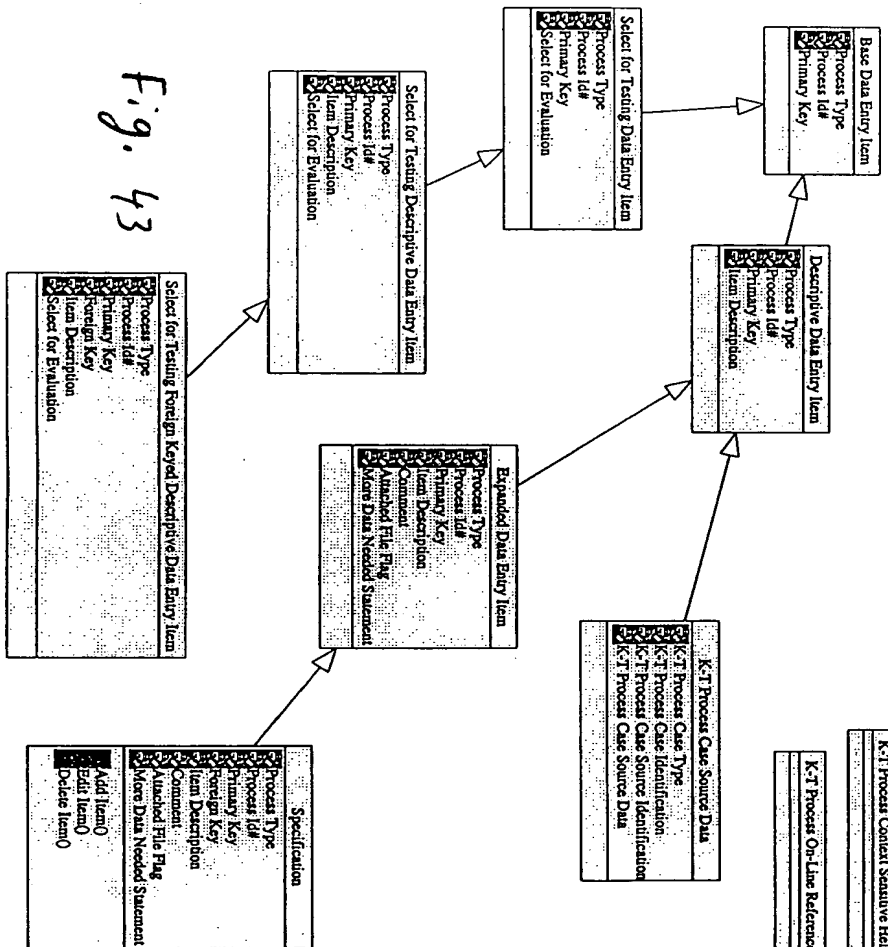


Fig. 43

K-T Process In-Process Action Repository
K-T Process Case Type
K-T Process Case Identification
K-T Process Case Action Item Test
K-T Process Case Action Item Responsible Person or Group
K-T Process Case Action Item Due Date
K-T Process Case Action Item Identification Number
K-T Process Case Action Item Status
K-T Process Case Action Item AT Export Status

This probably is redundant now

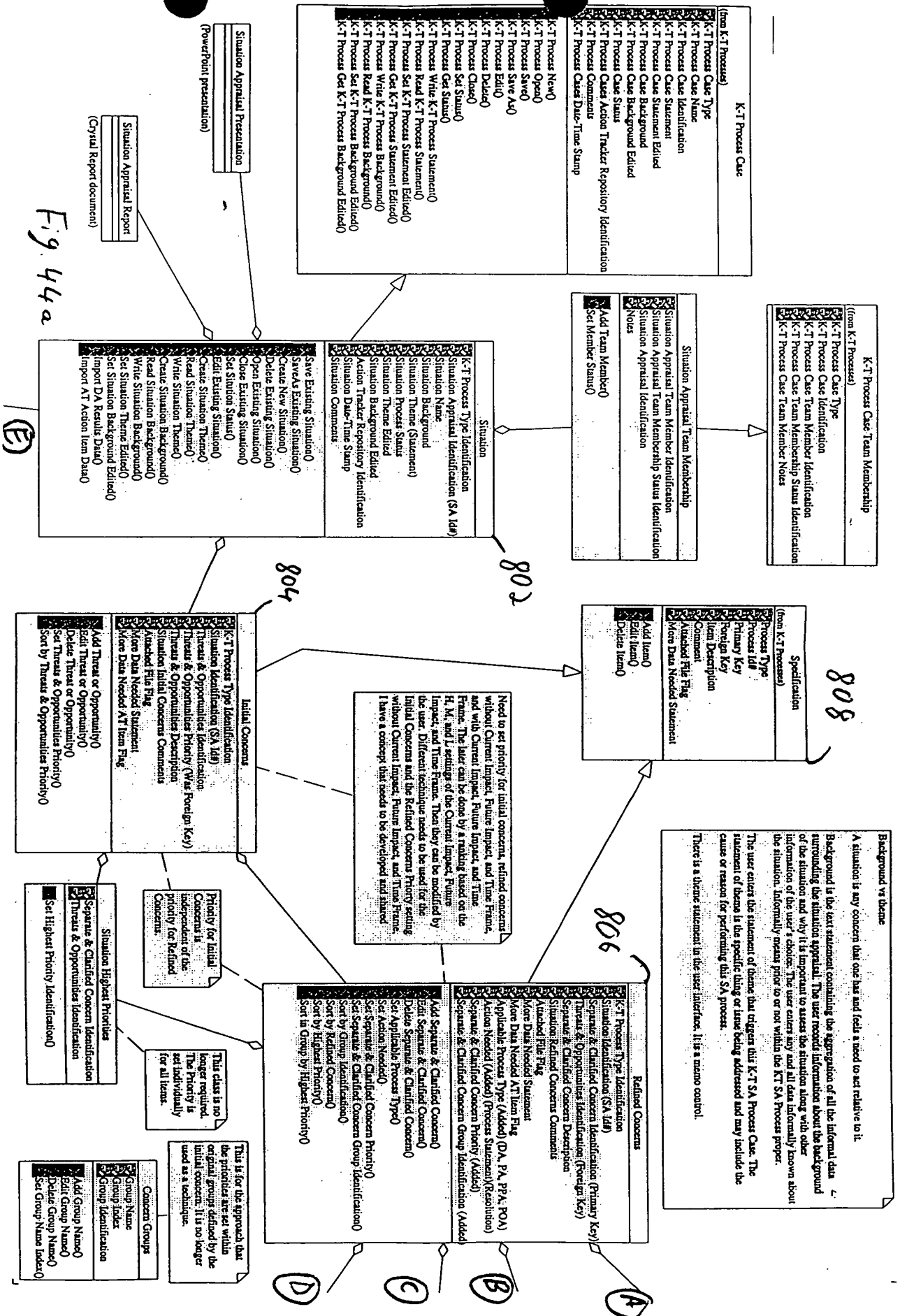
Priority
Item Priority Description
Item Foreign Key

K-T Process Actions
Process Identification
Actions Object Identification
Actions Item Identification Number
Actions Item Test
Actions Item Responsible Person or Group
Actions Item Due/Done Date
Add Action Item()
Edit Action Item()
Delete Action Item()

K-T Process In-Process Actions
Process Identification
In-Process Actions Object Identification
In-Process Action Item Identification Number
In-Process Action Item Test
In-Process Action Item Responsible Person or Group
In-Process Action Item Due Date
In-Process Action Item Status
In-Process Action Item AT Export Status
Add In-Process Action Item()
Edit In-Process Action Item()
Delete In-Process Action Item()
Set In-Process Action Item Status()
Set In-Process Action Item AT Export Status()

K-T Process Status Code
K-T Process Type Identification
K-T Process Status Code Identification
K-T Process Status Code Mechanism
K-T Process Status Code Description
K-T Process Status Code Manager Identification
K-T Process Status Code K-T Process Identification
Add Status Code()
Edit Status Code()
Delete Status Code()

004493783-012800



00403783-0128000

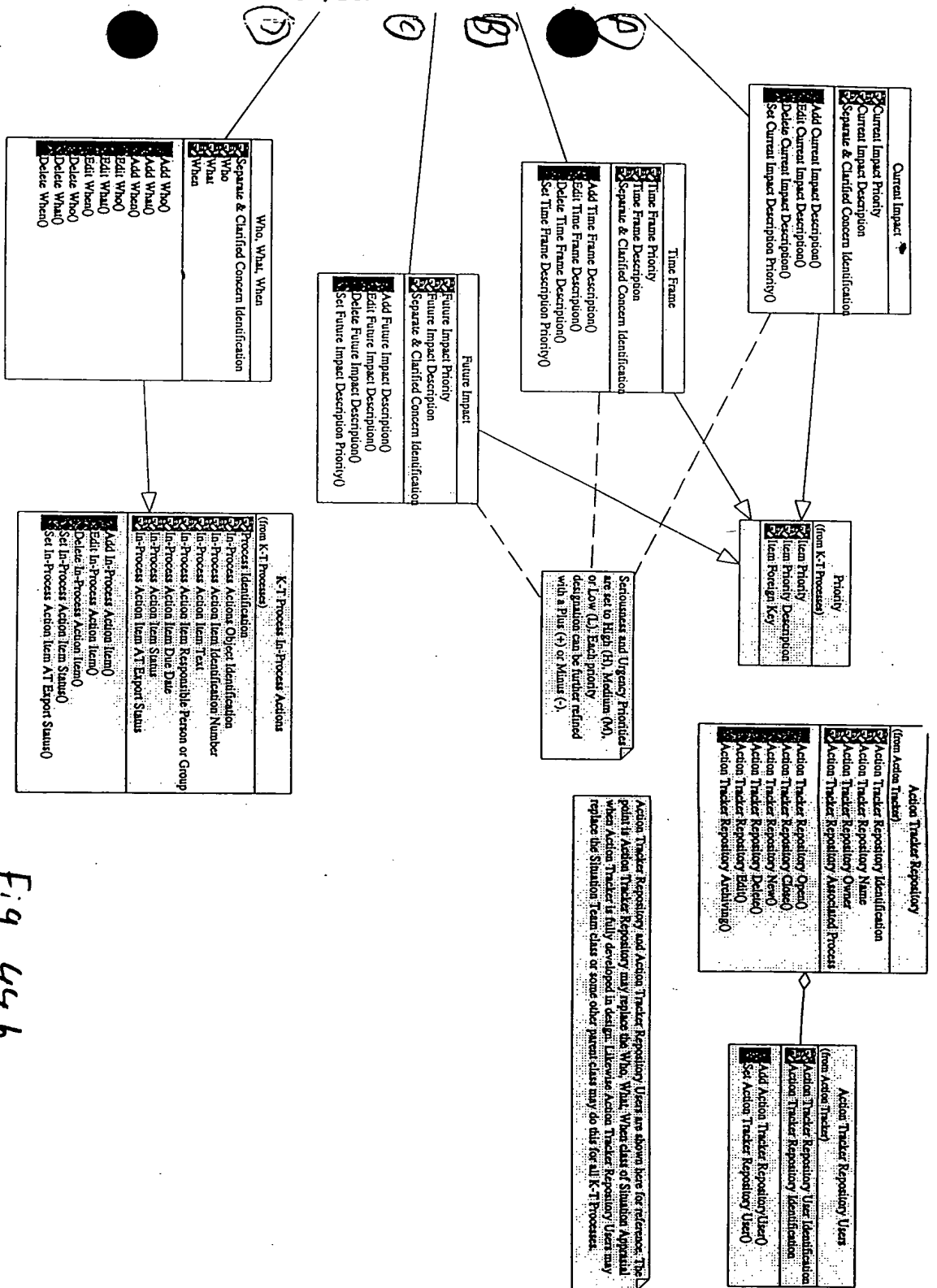


Fig. 44b

00003783 012800

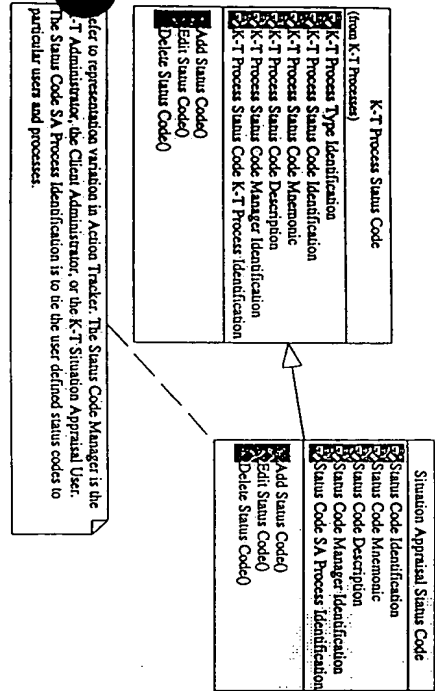


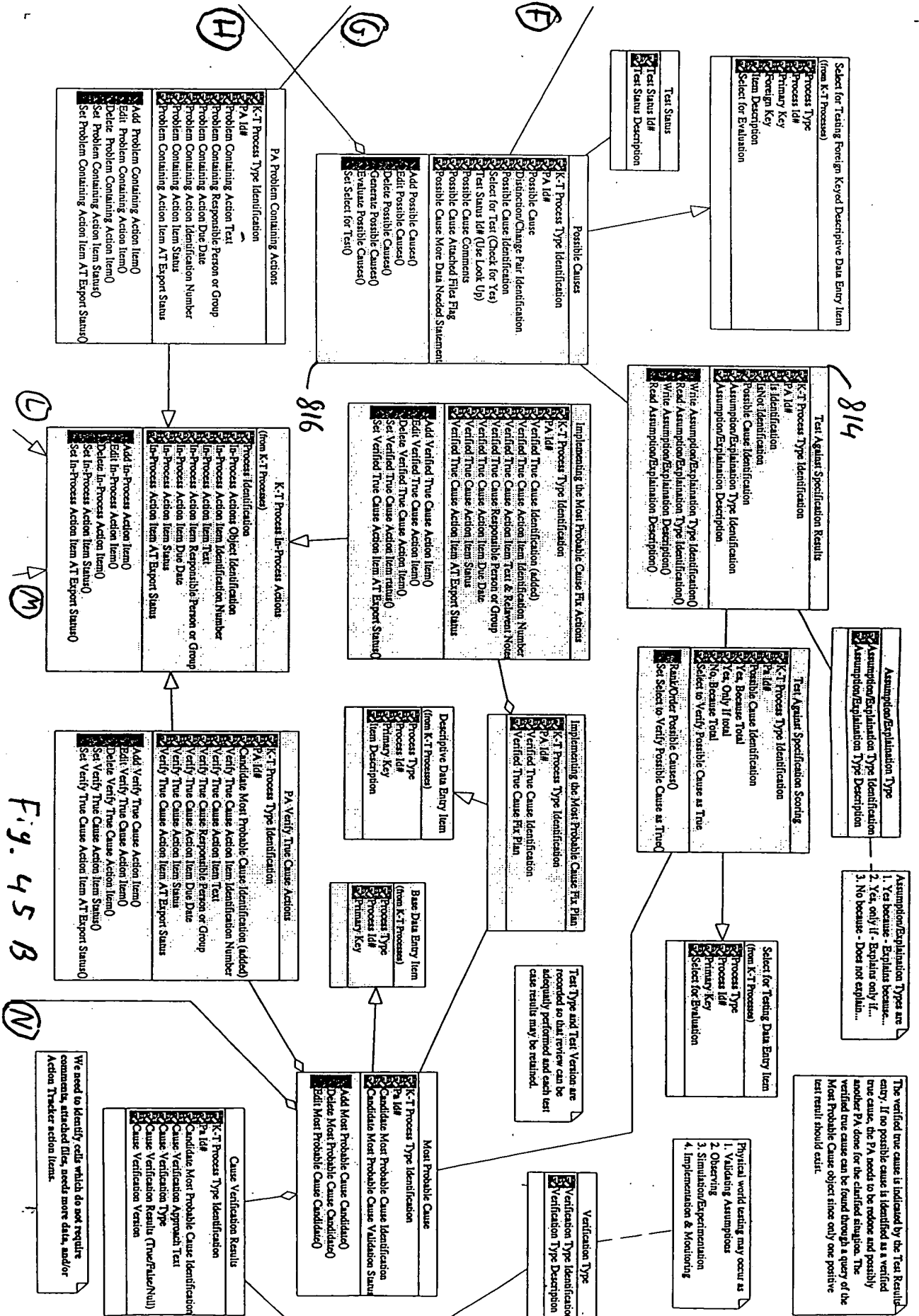
Fig. 44c

Establish priority:
 Select a concern that seems to be the highest priority.
 Select another and place it above or below the first concern in priority.
 Select a third and place it relative to the first two concerns. Use drag and drop graphically.
 Select additional concerns sequentially and place as above.
 Select those that represent the group classified as High Priority and designate as such.
 Select from the remainder those that represent the group classified as Medium Priority and designate as such.
 The remainder are classified as Low Priority and are designated as such.

Karl:
 As a follow up to our discussion, I want to confirm that we do need some type of ordering control in the SA grid on the initial "list concerns" screen. We may also want to allow this on the "separate and clarify" grid. However, in this case, the user could still only order the parent cells (with the children following the parent). They could not order children cells individually.
 I can see where this functionality could be useful any time we have a single-column grid, such as in DA (list Objectives and List Alternatives) and PPA/POA (list Potential Problems/Opportunities).
Nick:

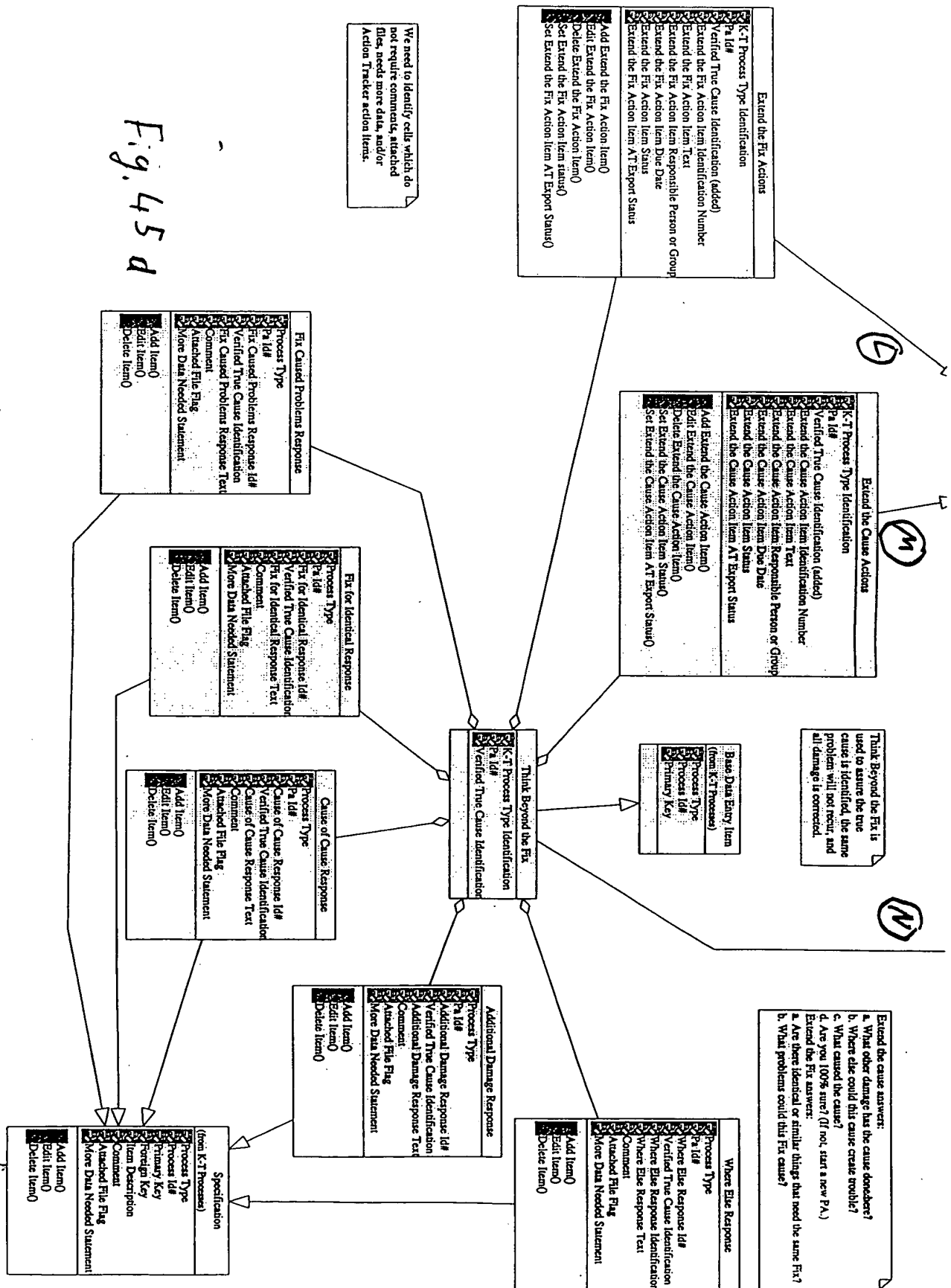


④ / ⑦

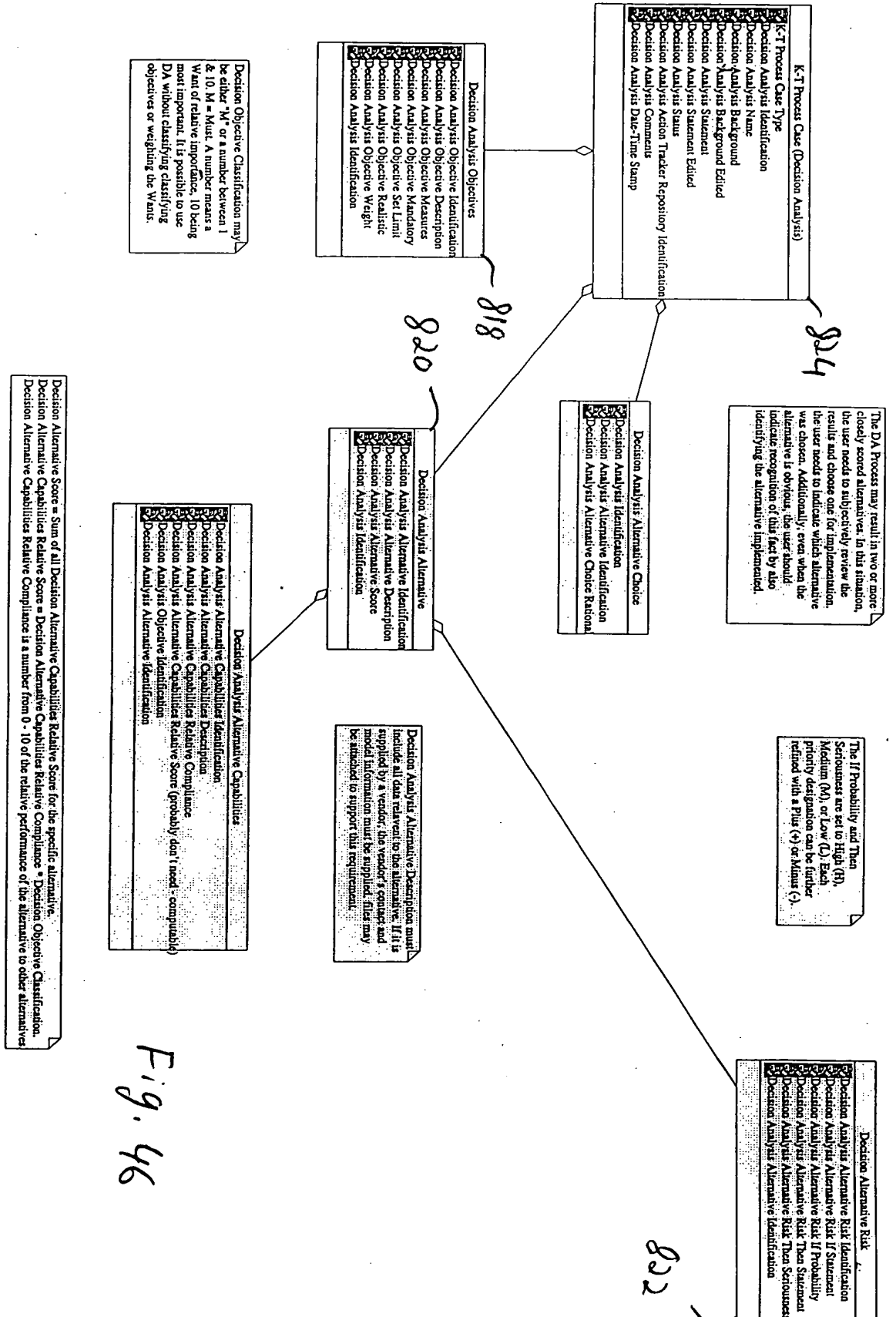


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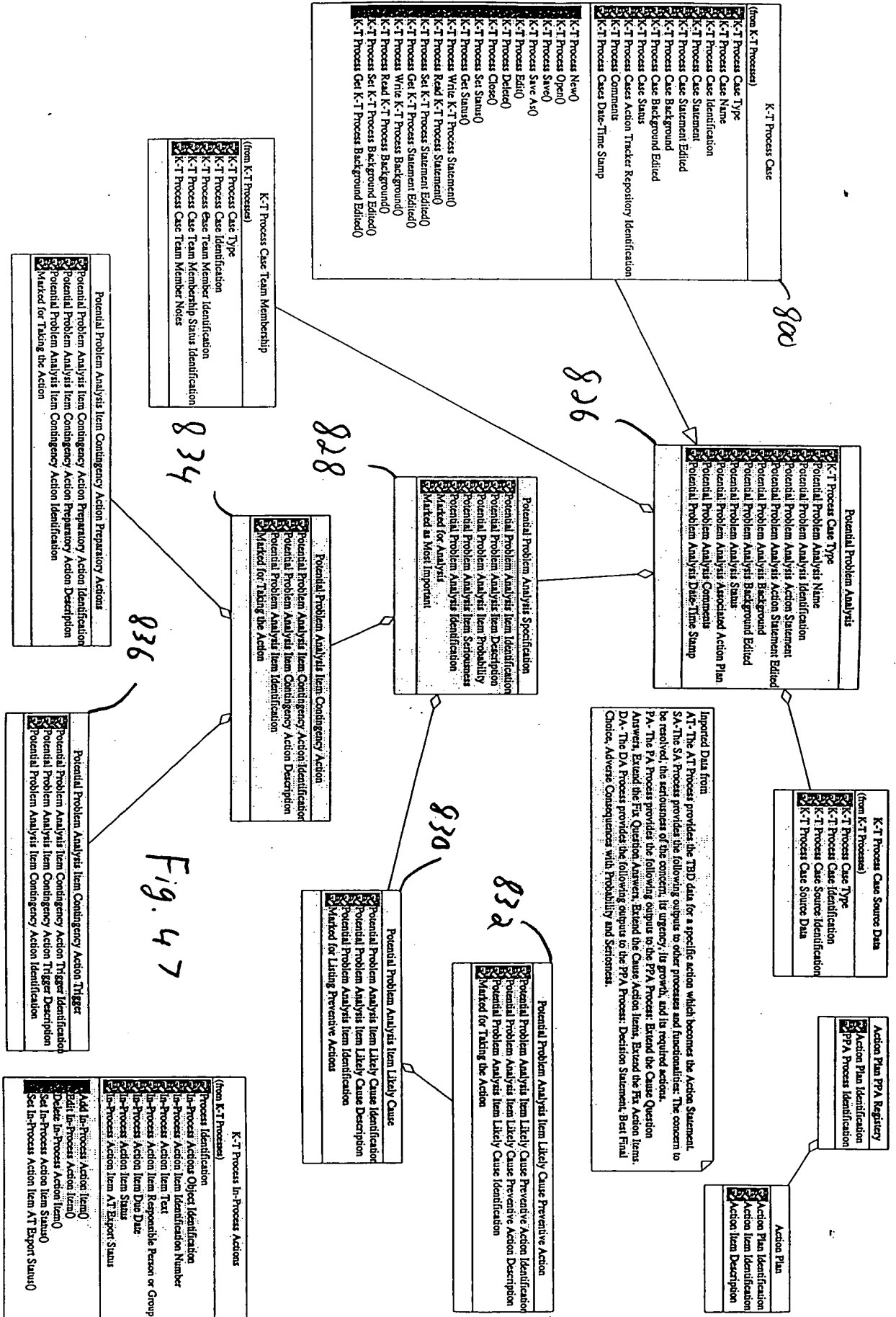


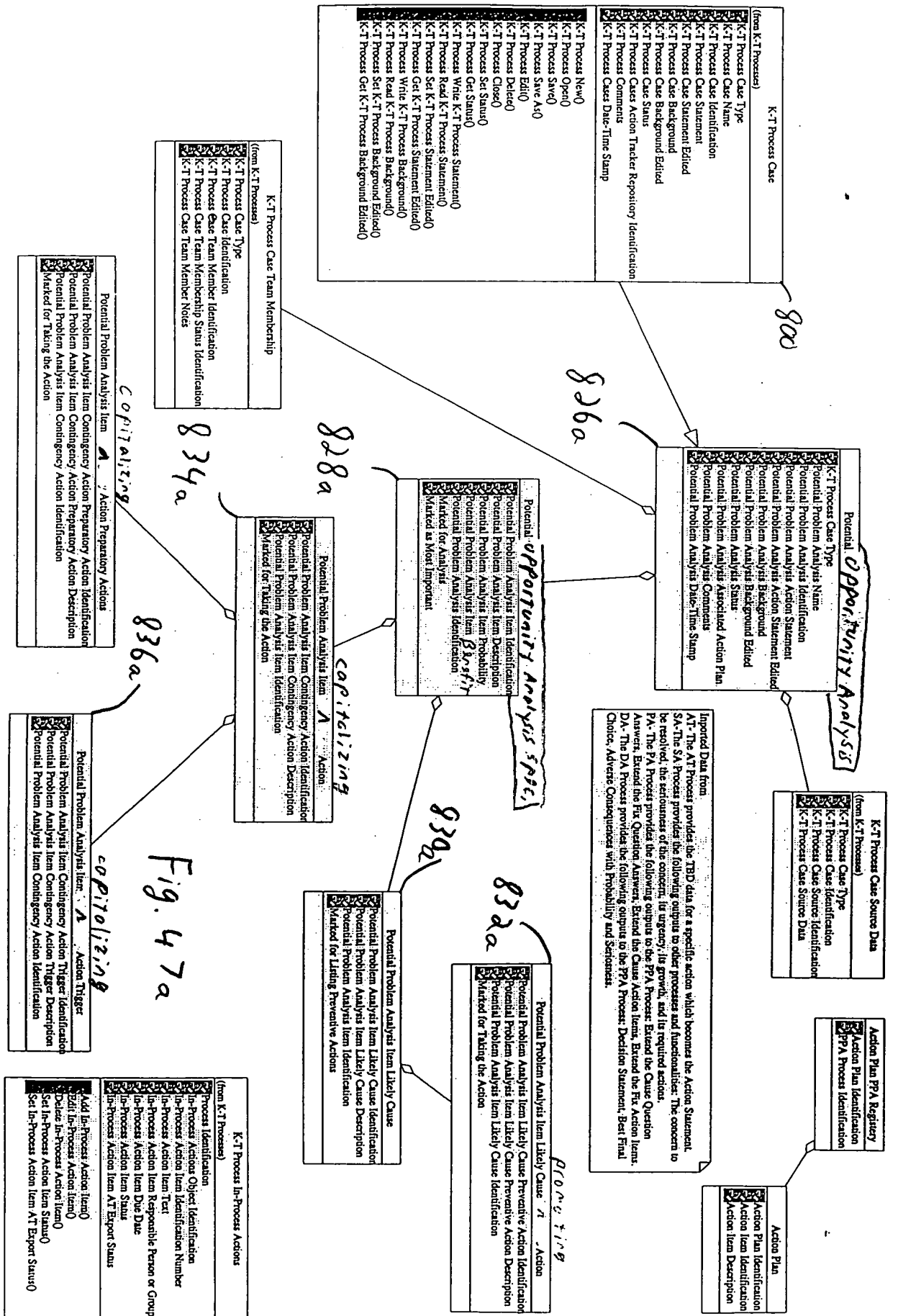


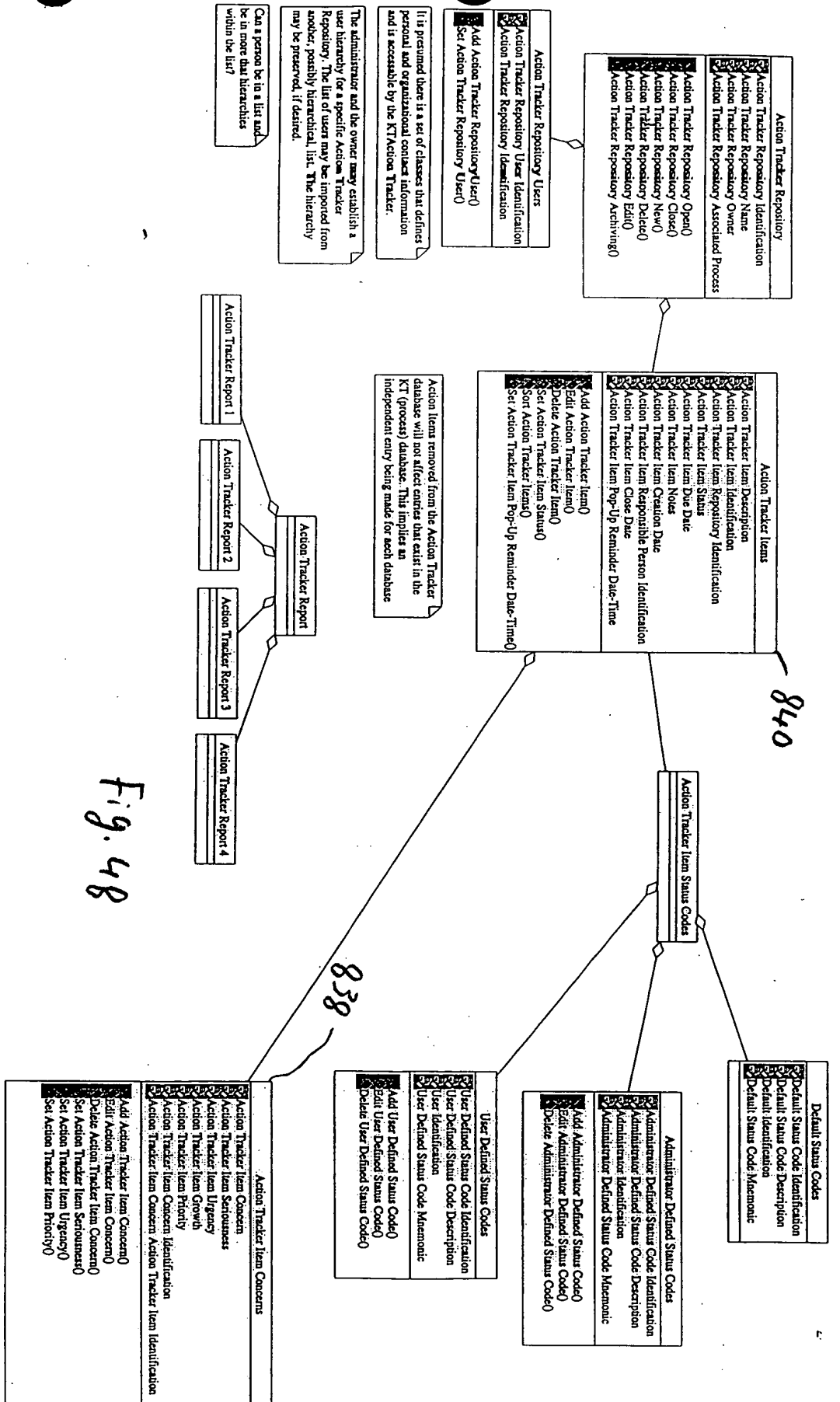
00403783-0128000



00493783-042800







004493763-012800

Fig. 49

F: 9.50

File View Format Support Window Mode Exit

Potential Analysis

opportunity Access Benefits

Action Statement

900

903

904 Action 906 Action Plan Notes 908 Who 910 When

914

916

922 Priority 916 Potential opp. 918 Probability 920 Benefit

High, Medium, Low	High, Medium, Low	High, Medium, Low	High, Medium, Low
High, Medium, Low	High, Medium, Low	High, Medium, Low	High, Medium, Low
High, Medium, Low	High, Medium, Low	High, Medium, Low	High, Medium, Low
High, Medium, Low	High, Medium, Low	High, Medium, Low	High, Medium, Low

Insert OPP.

924

OLR Demos Examples Process Expert

Fig. 51

File View Format Support Window Mode Exit

Potential Analysis

opportunity Consider Likely Causes

Action Statement

903

904 Action 906 Action Plan Notes 908 Who 910 When

914

922 Priority 906 Potential opp. 918 Probability 920 Benefit

High, Medium, Low	High, Medium, Low	High, Medium, Low
High, Medium, Low	High, Medium, Low	High, Medium, Low
High, Medium, Low	High, Medium, Low	High, Medium, Low
High, Medium, Low	High, Medium, Low	High, Medium, Low

926 928

Insert Cause

930 932 934

OLR Demos Examples Process Expert

936 Fig. 52

File View Format Support Window Mode Exit

Potential Analysis

opportunity Taking Promoting Action

Action Statement

Action	Notes	Who	When

Prev
Next

Promoting Actions

Priority	Potential opp.	Likely Cause	Promoting Action

Insert Likely Cause

Insert Preventive Action

OLR Demos Examples Process Expert

Fig. 53

File View Format Support Window Mode Exit

Potential Analysis

opportunity Taking Capitalizing Actions

Action Statement

Action	Notes	Who	When

Prev
Next

Capitalizing Actions

Priority	Potential opp.	Capitalizing Action	Trigger

Insert Contingent Action

Insert Trigger

OLR Demos Examples Process Expert

939

942

940 944 Fig. 54

Fig. 55

ELECTRONIC TOOL™

Edit Cell Communication View Support Window

State Possible Causes ▼ Problem:

Describe the Problem

State the Problem

Specify the Problem

Identify Possible Causes

Use Distinctions and Changes

✓ State Possible Causes

Evaluate Possible Causes

Test Possible Causes Against Specification

Determine the Most Probable Cause 

Confirm True Cause

Gather Facts to Verify the True Cause

Think Beyond the Fix

SITUATION APPRAISAL

▼ PROBLEM ANALYSIS

DECISION ANALYSIS

POTENTIAL PROBLEM ANALYSIS 

POTENTIAL OPPORTUNITY ANALYSIS

ACTION TRACKER

You've chosen to conduct a Situation Appraisal. If you're concerned about a situation and are not sure what to do, this process will help you.

- Identify and prioritize specific concerns.
- Understand the actions to take to resolve them.

Before you begin the appraisal, you'll complete these steps:

- 1 Record the background of the situation.
- 2 Record the theme of the appraisal.

Notepad

Previous Screen

Next Screen

Fig. 57

1 What's the background of this situation? Describe the situation and its history.

Background

Notepad

Previous Screen

Next Screen

Fig. 58

004493783-012800

Kit eThink™



2 What's the theme or title of this Situation Appraisal? Record a brief phrase in a word or sentence in this appraisal.



Theme or Title

Notepad

Previous Screen

Next Screen

Fig. 59

094492789-012800

You've recorded the situation background. Now, you'll identify your concerns about this situation by completing these steps:

- 1 Record your concerns
- 2 Separate and plan your concerns until they are actionable
- 3 Review your concerns

Notepad

Previous Screen

Next Screen

Fig. 60

09493783.012800



1 What are your concerns about this situation? Record a brief description of each issue, threat, or opportunity you're facing.



ins

Insert New Concern

Notebook

Previous Screen

Next Screen

Fig. 61

004493783-0123000

--	--	--	--

Insert New Concern

[Previous Concern](#)
[Next Concern](#)

Next Screen

Fig. 62

3 Review Your Separated and Clarified concerns. Are any concerns still unclear? Do any of the concerns require more than one action to resolve them? If so, revise them now.

Concerns		Separated and Clarified Concerns

Insert New Concern

Insert New Clarified Concern

Notepad

Previous Screen

Next Screen

Fig. 63

00403783-012300

You've identified and clarified your concerns. In the next section, you'll set priority for resolving your concerns. Is the order in which the concerns need to be resolved clear?

☒ Yes, and I would like to set the priority now.

☐ No. I need to determine the Current Impact, Future Impact, and Time Frame of each concern before I can determine the priority.

Notepad

Previous Screen

Next Screen

Fig. 64

00443783-012300

1. Determine whether each condition is of High, Medium, or Low priority.
2. Review your priorities.



1 What's the priority for resolving each concern? Prioritize your concerns as High, Medium, or Low depending on their importance and on how often you will resolve them.

5

ns		Priority
		High <input type="checkbox"/>
		High <input type="checkbox"/>
		High <input type="checkbox"/>
		High <input type="checkbox"/>
		High <input type="checkbox"/>
		High <input type="checkbox"/>
		High <input type="checkbox"/>
		High <input type="checkbox"/>

Insert New Concern

Notebook Previous Screen Next Screen

Fig. 66

09463783-012800

etthink™



2. Review your prioritized concerns. Does the priority you set accurately indicate which concerns you should work on first? Can you change the priority?

	High	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	High	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	High	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	High	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	High	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	High	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	High	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	High	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Insert New Concern

Notepad Previous Screen Next Screen

Fig. 67

004493783-012800

You've prioritized your concerns. Now you'll determine what to do to resolve each concern by completing these steps:

1. Determine the process you'll use
2. Describe how you'll resolve your concerns

Notepad

Previous Screen

Next Screen

Fig. 68

05442783-012800

WS

[illegible]

Insert New Conceal

Notepad

Previous Screen

Next Screen

Fig. 69

[illegible]

2a What do you need to do to resolve the concern? Briefly describe how you plan to resolve the concern.

Process		Resolution
Insert New Concern	Situation Appraisal	
	Situation Appraisal	
	Situation Appraisal	
	Situation Appraisal	

Record the resolution of an identified concern

Contains
2012
Previous Concern
Next Concern

Notepad

Previous Screen

Next Screen

Fig. 70

You've determined how to resolve your concerns. Now, you'll develop a plan for resolving the concerns by completing these steps:

- 1 Record actions needed to resolve the concern and assign responsibility for the actions.
- 2 Review your plan.

Fig. 71

00403783-012800

1a What needs to be done to accomplish Resolution for Review the concern and record the specific actions needed to resolve For each action record:

Items	Priority	Process	Resolution	Actions	When	Who	Role
	High <input checked="" type="checkbox"/>	Situation Appraisal <input checked="" type="checkbox"/>					
	High <input checked="" type="checkbox"/>	Situation Appraisal <input checked="" type="checkbox"/>					
	High <input checked="" type="checkbox"/>	Situation Appraisal <input checked="" type="checkbox"/>					
	High <input checked="" type="checkbox"/>	Situation Appraisal <input checked="" type="checkbox"/>					
	High <input checked="" type="checkbox"/>	Situation Appraisal <input checked="" type="checkbox"/>					

Insert New Action

Assign actions for all other concerns

Previous Concern
Next Concern

Notepad

Previous Screen

Next Screen

Fig. 72

004493783-012200

2 Here is your plan to resolving your concerns. If these actions are taken on time, will your concerns be resolved? If not, revise the list.

Items	Priority	Process	Resolution	Actions		When	Who	Role
	High <input checked="" type="checkbox"/>	Situation Appraisal <input checked="" type="checkbox"/>						
	High <input checked="" type="checkbox"/>	Situation Appraisal <input checked="" type="checkbox"/>						
	High <input checked="" type="checkbox"/>	Situation Appraisal <input checked="" type="checkbox"/>						
	High <input checked="" type="checkbox"/>	Situation Appraisal <input checked="" type="checkbox"/>						
	High <input checked="" type="checkbox"/>	Situation Appraisal <input checked="" type="checkbox"/>						
	High <input checked="" type="checkbox"/>	Situation Appraisal <input checked="" type="checkbox"/>						
	High <input checked="" type="checkbox"/>	Situation Appraisal <input checked="" type="checkbox"/>						
	High <input checked="" type="checkbox"/>	Situation Appraisal <input checked="" type="checkbox"/>						

Insert New Action

Notepad

Previous Screen

Next Screen

Fig. 73

094493783-012800

What object?	Is Not	Distinctions	Changes
Flight attendants	Pilots, Passengers, Ground Crew, Gate Agents, Lead Flight Attendants	Demonstrate safety equipment	New life vests (early January)
Both male and female	Only female Only male		
Red sweat	Blisters, sores		
Perspiration with red particles	Blood		
On our A300s	Other carriers using A300s Our DC-9s	Our A300 interior configuration	New counter tops (early March) New cleanser (mid March) new safety equipment (early January)
Where Geographically?	Other Eastern 727s Our other A300 routes Our other 727	different flotation devices Flights over water	new life vests (early January) No known change

In the Use Distinctions and Changes step of Problem Analysis, you will gain insight into the data you developed in Specify the Problem. Here are the steps you will follow:

- 1 **Look** for all possible Distinctions between the "Is" and "Is Not" in your Object data, and record those Distinctions in the appropriate cell.
- 2 **Repeat** step 1 for every "Is/Is Not" pair in your specification.
- 3 **Reflect** on your data, making sure it is complete and specific.
- 4 **Look** for Changes that may be associated with each Distinction about your Object, and record those Changes in the appropriate cell.
- 5 **Repeat** step 4 for every Distinction that you have identified.
- 6 **Reflect** on your data, making sure it is complete and specific.

Fig. 75

[illegible]

ELECTRONIC TOOL™

Edit Cell Communication View Support Window

Use Distinctions and Changes

Problem: Flight attendants have red sweat

3 Here are all the Distinctions you recorded. Review your data now and make any additions or corrections.

What object?	Is	Is Not	Distinctions
Flight attendants		Pilots, Passengers, Ground Crew, Gate Agents, Lead Flight Attendants	Demonstrate safety equipment Touch lifevests Touch oxygen masks Handle sample belts
What deviation?		Both male and female	Only female Only male
		Red sweat	Blisters, sores Blood
Where geographically?		Perspiration with red particles	
		On our A300s	Other carriers using A300s Our DC-9s
			Our A300 interior configuration

Insert New Distinction

Notepad Support Go to Worksheet Mode Previous Screen Next Screen

Fig. 77

ELECTRONIC TOOL™

Edit Cell Communication View Support Window

State Possible Causes

Problem: Flight attendants

have red sweat

1 How could new life vests (early January)

Cause:

Red sweat

In, around, or between:
Flight attendants

Type your answer in the Possible Cause area below. If you find more than one Possible Cause for this Change, click the Insert Cause button, then type the new Possible Cause in the new cell.

Possible Causes

Dye rubs off on flight attendants

Allergic reaction by flight attendants

Insert New Cause

2

When you can think of no other Possible Causes for this Change, click the Next Change button to consider the next Change from those you listed previously.

Change
1 of 3

Previous Change
Next Change

Notepad Support Go to Worksheet Mode

Previous Screen Next Screen

Fig. 78

ELECTRONIC TOOL™

Edit Cell Communication View Support Window

Test Possible Causes Against Spec. Problem: Flight attendants have red sweat

Select a cause to test: link from the printed letters causing allergic reactions in some attendants

	Is	Is Not	Conditions	Assumptions or Reasons
What object?	Flight attendants	Pilots, Passengers, Ground Crew, Gate Agents, Lead Flight Attendants	only if...	the flight attendants are the only ones touching life vests
	Both male and female	Only female Only male	yes, because ...	men and women can have allergies
What deviation?	Red sweat	Blisters, sores	no, because...	allergies cause rash & blisters, not sweat
	Perspiration with red particles	Blood	no, because...	allergies cause rash & blisters, not sweat
Where Geographically?	On our A300s	Other carriers using A300s Our DC-9s	yes, because...	only our A300s use vests with printing
	Three 727s	Other Eastern 727s	yes, because...	only those 727s use vests with printing
	NY-Florida (A300)	Our other A300	yes, because...	only these routes use

Insert Reason or Assumption

Notepad Support Go to Interview Mode Previous Screen Next Screen

ELECTRONIC TOOL™

Edit Cell Communication View Support Window

Test Possible Causes Against Spec. Problem: Flight attendants have red sweat

3 If Ink from the printed letters causing allergic reactions in some attendants is the true cause of Flight attendants have red sweat

Does it explain:
Flight attendants

But not:
Pilots
Passengers
Ground Crew

Conditions

- ☐ yes it does, because...
- ☐ no it does not, because...
- ☒ it does, but only if you assume...

Assumptions or Reasons

the flight attendants are the only ones touching life vests

Insert Assumption or Reason

4 To test this cause against the next Is/Is Not pair, click Next Pair.

Pair 2 of 4 Previous Pair Next Pair

5 If you've tested all the Is/Is Not pairs, or if you've rejected this cause, click Select Cause to test a different cause.

Select Cause

Notepad Support Go to Worksheet Mode Previous Screen Next Screen

Fig. 81

二二二

Previous Screen Next Screen

Flg. 82

ELECTRONIC TOOL™

Edit Cell Communication View Support Window

ACTION PLAN

Action Files: **Red Sweat PA**

Priority	Concern	Seriousness	Urgency	Growth	Process
Medium	Confirm true cause	Low	High	Stable	PA
Low	PA on dropping revenues	Medium	Low	Increasing	PA

Sort By Priority

Action	Who	When	Notes	Status
Perform chemical analysis on cleaning fluid	J. Schlick	11-18-98	Fluid product # 144	Cause Confirmed
Check paint on all new life vests.	J. Schlick	12-15-98		Completed

Sort By When

View My Actions Only

Send/Receive Action

Notepad Support

Fig. 83

1 Look at the "What Object" Is/Is Not pair below. What is distinct (different odd, special or unique) about Flight attendants when compared to Pilots, Passengers

Type an answer in the Distinctions cell below.
If you find another Distinction, click the Insert Distinction button.
Pilots, Passengers, Ground Crew, Gate Agents, Lead Flight Attendants in the new cell.

What object?	Is	Is Not	Distinctions
Flight attendants (The full text and intent of this question is displayed within this mouse-over)		Pilots, Passengers, Ground Crew, Gate Agents, Lead Flight Attendants	Demonstrate safety equipment

Insert New Distinction

2 When you can think of no other Distinction for this "Is/Is Not" pair, click the Next Pair button to consider the next pair, then repeat step 1.

Fig. 84

00493783-0128000

You've chosen to conduct a Problem Analysis. If you have a problem, and you don't know what's causing it, Problem Analysis will help you find the cause.

Before you begin the analysis, record the problem background by completing these steps:

- 1 Describe how the object with the problem is actually performing and how it should be performing.
- 2 Write a concise Problem Statement that explains what object has the problem and what the problem is.
- 3 Confirm that the cause of the problem is unknown.
- 4 Describe how the problem was discovered.
- 5 Record the actions to minimize the problem and any attempts to solve it.
- 6 Review the problem background.

Notepad

Previous Screen Next Screen

Fig. 85

0044937833-012800

1a How is the person process of thing with the problem actually performing?



1b How should the person process of thing with the problem be performing?



Should:

Fig. 86

09493783-012800

Refer to your Should and Actual information to answer the following questions:

Should:

Actual:

2. What equipment, system, product, process, or person has the problem? Briefly describe the object that has the problem.

Object:

2b. What's the difference between what should be happening and what's actually happening? Briefly describe the deviation the object is experiencing.

Deviation:

Your Problem Statement describes the object and the deviation. If necessary, edit the statement so that it can be easily understood by anyone in your organization.

Problem Statement

Notepad

Previous Screen

Next Screen

Fig. 87

3 Do you know what's causing it?

☐ No. I'm not certain. Continue the PA

☐ Yes, but I need to choose a way to fix it.

☐ Yes, but I need to make a plan for fixing it.

☐ Yes, but I can't fix it until I find out what's causing the cause.

☐ Yes, but I want to continue this PA anyway.

Notepad

Previous Screen

Next Screen

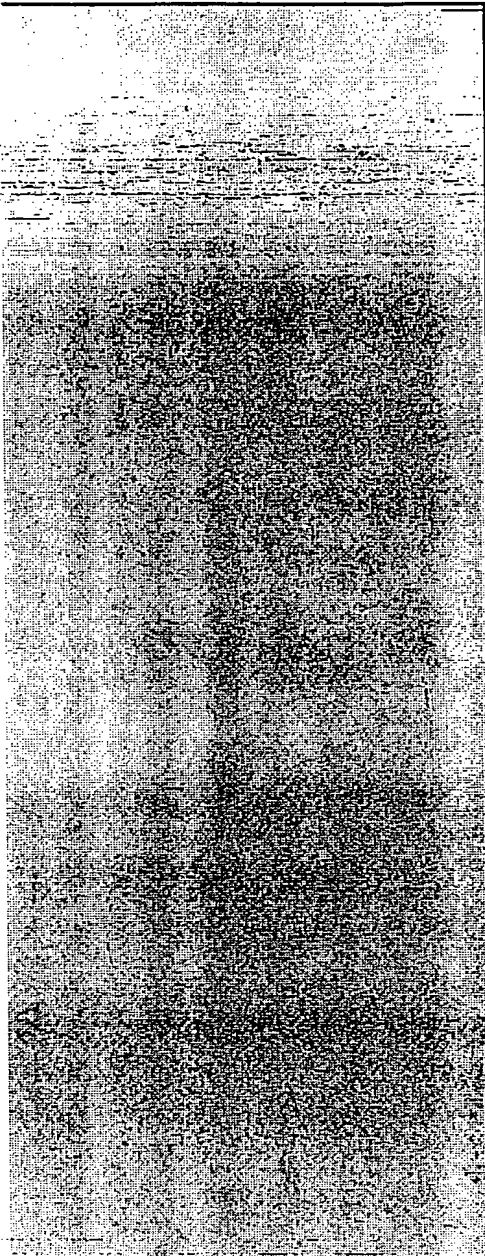
Fig. 88

004493783-012800

4. How was discovered? Record any information you know about how the problem was discovered and who discovered it.



How was the problem discovered:



Notepad

Previous Screen

Next Screen

Fig. 89

00493783-012800

5a What can you do to minimize the problem? List actions that need to be taken to contain the problem. Who is responsible for completing each action? Assign a person or group to each action.



Actions to minimize the problem

Person or group responsible

Date

Insert New Action

5b What have you done to try and solve the problem? Record any actions that have been taken.



to solve the problem

Insert New Action

Notepad

Previous Screen

Next Screen

Fig. 90

004493782-012800

6. Here's the information you listed as background for your problem. It may include information about the problem that you entered in a letter, notebook, or file. Is it a complete and accurate record of the problem background? Do you want to add any information?

If so, edit the problem background here.

Actual:

Should:

81/127
Do you know what's causing the problem?

How was the problem discovered?

Notepad

Previous Screen

Next Screen

Fig. 91

00003783.012800

In order to find the cause of the problem you'll need to describe four aspects of it: What, Where, When, and Extent. First you'll describe what the problem is by following these steps:

1. Record what specific object has the deviation.
2. Record what similar objects could have the problem, but do not.
3. Record the specific deviation.
4. Record what similar deviations the object could have, but does not.
5. Review your What data, making sure it's complete and specific.

Notepad

Previous Screen

Next Screen

Fig. 92

09493783-012800

What object?	
1	What specific person, system, or thing is expanding the deviation? Is your problem statement you described the object as "if possible, devise your description to make it more specific and complete."
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99	
100	

Fig. 93

09493783-012400

2 What person's system, nothing could also have, but does not? In the is Not cell, its objects that are similar to but are not, concerning the deviation

What object?		Is	Is Not

Notepad

Previous Screen

Next Screen

Insert New Is/Is Not Pair

Fig. 94

00003782-012800

84/127

3. What exact is the deviation? In your problem statement, you described the deviation as: If possible, reverse your decision to make it more accurate and complete.



What deviation?

s

Notepad

Insert New WS

Previous Screen | Next Screen

Fig. 95

09493783-012800

85/127

4. What other deviations could reasonably be expected? In the S Not cell, record conditions similar to that you might expect to see. Head, tail, aster, small, or measure on the object, build, etc.

What deviation?	Is	Is Not

Insert New S/S Not Pair

Notepad

Previous Screen

Next Screen

Fig. 96

00443783-012800

86/127

5 Review your data. Can you make it more specific? Do you need to add more? If so, revise your data now.

	Is	Is Not
What object?		
What deviation?		

Insert New Is/Is Not Pair

Notepad

Previous Screen

Next Screen

Fig. 97

00403783-012400

1. Record the physical location where the object is observed when it has the deviation.
2. Record other physical locations where the object has been when it did not have the deviation.
3. Record where the deviation is on the object.
4. Record locations on the object where the deviation could be, but is not.
5. Review your metadata, making sure it's complete and specific.

INEXCRETE

[illegible]

1. Where is when it has? Record the specific physical locations where the object is located when it has the population.

Where geographically?

is

Insert News

Notepad

Previous Screen

Next Screen

Fig. 99

09493783-012800

89/127

2. Where does it could have been located? Record the places or identical objects have been or could have been located when they did not have the deviation.

Where geographically?	Is	Is Not

Insert New Is/Is Not Pair

Fig. 100

09493783-012800

3 Where is location? Record all the places on the object where the deviation can be seen, smelled, felt, heard, tasted, or measured.



Where on the object?

Is

Insert New/Is

Notepad

Previous Screen

Next Screen

Fig. 101

09493783-012800



4. Where besides could be located on the ? Record places on the object where you could reasonably expect to see the deviation. You do not



Where on the object?

Is

Is Not

Notepad

Insert New s/s Not Pair

Previous Screen

Next Screen

Fig. 102

00403783-012800

92/127

5 Review your Where information. Can you make your data more specific? Do you need to add any data? If so revise your data now.

	Is	Is Not
Where geographically?		
Where on the object?		

93/12

Notepad

Previous Screen

Next Screen

Insert NEW IS/IS NOT Pair

Fig. 103

09493783-042800

You just described the location of the object. Now, describe when the problem occurred by following these steps:

1. Record when the problem was first noticed.
2. Record the times when the problem could have been noticed first, but was not.
3. Record the times the problem has occurred since the first time it happened.
4. Record the times after the first occurrence when the problem could have happened, but did not.
5. Record the event in the object's life cycle that was happening when the problem first occurred.
6. Record the events in the object's life cycle that could have been happening when the problem first occurred.
7. Review your when data.

Notepad

Previous Screen | Next Screen

Fig. 104

00493783-012800

1 When did you first notice it? Record the time and date the deviation first occurred

When first?

5

Insert New Is

Notepad

Previous Screen

Next Screen

Fig. 105

09493783-012800

2. What times before or after could you have first noticed this? Record other dates and times when the problem could have happened.



When first?

Is

Is Not

Insert News/Is Not Pair

Notepad

Previous Screen

Next Screen

Fig. 106

09493783-012800

96/127

3a When since has happened? Record the dates and times the deviation occurred after the first time it was noticed



When since?

is



3b How often does it happen? Determine whether the deviation happens continuously, periodically or sporadically. Select the pattern from the list

What pattern?

is

Continuously



Note pad

Previous Screen Next Screen

Fig. 107

004493783-012800



KXIX

You said the deviation is occurring in a pattern. Based on this information, the system has selected the patterns that do not describe how often the occurs. If necessary, reverse the data.

Next Screen

Figure 1. The 128-bit block cipher, E_{128} , and its inverse, D_{128} . The function f is the round function, and f^{-1} is its inverse. The function f is defined as $f(x) = x \oplus K \oplus S(x)$, where K is the round key, S is the S-box, and \oplus is the XOR operation. The function f^{-1} is defined as $f^{-1}(x) = x \oplus K \oplus S^{-1}(x)$, where S^{-1} is the inverse S-box. The function f is applied to the input x to produce the output y . The function f^{-1} is applied to the output y to produce the input x .

5 - What was happening to when was first observed? Describe the event, stage, operation, or speed in the object's life cycle that was happening when you first noticed the deviation.



When in the life cycle?

Is



Insert News

Notepad

Previous Screen

Next Screen

Fig. 109

09493783-012800

99/127



6 What could have been happening to when was first observed? Describe the events, stages, functions, or speeds of the object's life cycle during which you might have expected to first note the deviation from the

When in the life cycle?	Is	Is Not

100/127

Notepad

Insert New Wis

Previous Screen

Next Screen

Fig. 110

00403783-012800

7. Review your information. Can you make your data more specific? Do you need to add any data? If so, revise it on.

	Is	Is Not
When first?		
When since?		
What pattern?		
When in the life cycle?		

Insert New/Is/Is Not Pair

Notepad

Previous Screen

Next Screen

Fig. 111

004493783 012800

You described when the problem occurred. Now, you'll describe the extent of the problem by completing these steps:

- 1 Record the number of objects that have the deviation
- 2 Record the number of objects that could have the deviation, but do not
- 3 Record the size of the deviation
- 4 Record what the size of the deviation could be, but is not
- 5 Record how many deviations are on a single object
- 6 Record how many deviations could be on a single object, but are not
- 7 Review your Extent data

Notepad

Previous Screen

Next Screen

Fig. 112

1a. How many have? Record the total number, the percentage, or both

How many objects?

is

1b. Is the number of with increasing/decreasing, or staying the same? Select the one that best describes the trend

is

Is the trend in number of objects?

Increasing

Notepad

Previous Screen

Next Screen

Fig. 113

00443783.012800

2a. What could the total number of with the but is not? Record the numbers of percentages more or less than that could be the total number of objects with the deviation.

How many objects?	Is	Is Not

2b. You said the number with the deviation is. Based on this information, the system selected trends that could be the next handle in the number of objects with the deviation. If necessary, revise the data.

What's the trend in number of objects?	Is	Is Not
Increasing		

Fig. 114

3a What is the size of a single? Record the size or range of sizes

What size?

Insert New/Is

3b Is the size of the increasing, decreasing, or staying the same? Select the one that best describes the trend.

What is the trend in the size?

Increasing

Notepad

Previous Screen

Next Screen

Fig. 115

4a. What other sizes could the belt be? Record the sizes or range of sizes more or less than

Is

Is Not

What size?

4b. You said the size of the is. Based on this information, the system selected trends that do not describe the change in the size of the deviation. If necessary, revise the data.

Is

Is Not

the trend in the size?

Increasing

Decreasing

Notepad

Previous Screen

Next Screen

Fig. 116

00003783-012800

5a How many are on path? Record the number of range

How many deviations?

is

Insert New

5b Is the number of deviations on path increasing, decreasing, or staying the same? Select the one that best describes the trend

is

Increasing

As the trend in deviations?

Notepad

Previous Screen

Next Screen

Fig. 117

00493783-012800

6a What would be the total number of on each, but is not? Record the number of deviations more or less than that you could see, but don't.



How many deviations?

Is

Is Not

6b You will be the number of per is. Based on this information, the system selected trends that do not describe the change in the number of deviations on each object. Inaccessibly, revise the data.

What the trend in deviations?

Is

Is Not

Increasing



Notepad

Previous Screen

Next Screen

Fig. 118

7 Review your Extensible. Can you make your data more specific? Does any data need to be added? If so, review it here.

	Is	Is Not
When in the life cycle?		
How many objects?		
What is the trend in number of objects?		
What size?		
What is the trend in the size?		
How many deviations?		

Insert New/Is Not?

Fig. 119

09493783-012800

Review your Problem Specification. Does it accurately describe what you know about the problem?
Does anything need to be added or changed? If so, revise your definition.

	Is	Is Not
What object?		
What deviation?		
Where geographically?		
Where on the object?		
When first?		
When since?		
When often?		

Insert New | Is | Is Not | Edit

Notepad

Previous Screen

Next Screen

Fig. 120

00493783-012800

You've described what the problem is, when and where it occurred, and the extent. Now, you'll identify possible causes of your problem by completing these steps.

Decide whether you want to develop causes using knowledge and experience of Distinctions and Changes.

If you decide to use knowledge and experience

Generate possible causes using your knowledge of the problem and experience with similar problems

Record the nature, size, of the deviation could be, but is not

If you decide to use Distinctions and Changes

Describe what is distinct about your "is" data when

Record how many deviations are on a single

Record how many deviations could be on

Review your Extent data

Review your Extent data

Review your Extent data

Notepad

Previous Screen

Next Screen

Fig. 121

09493783-012800

1. Which method would you like to use to identify possible causes of this problem?



GroupBox

☐ Use your knowledge of the problem and experience with past problems. Use this method if you have some ideas about what caused the problem.

☐ Look for conditions and changes in the IS and OIS data. Use this method if:

- ☐ You can think of any causes.
- ☐ You have many causes and need help determining the most likely cause.

Notepad

Previous Screen

Next Screen

Fig. 122

09493783-012800

2a. What is different, odd, special, or unique about what compared to? Record as many distinctions as you can think of. If you can't find a distinction, leave the cell blank.

What deviation?	Is	Is Not	Distinctions

Insert New S/S Not Pair

Insert New Distinction

2b. What are distinctions in and/or Is/Is Not pair?

Fig. 123

09493783-012800

3a. What has changed in... about... each change and the date it occurred

deviation?

Is

Is Not

Distinctions

Changes

Insert New (S) Not Pair

Insert New Distinction

Insert New Change

3b. Look for changes in... distinction

Notepad

Previous Screen

Next Screen

Fig. 124

09493783-012800

4a. How would you rate the severity of the problem? (1 = Not at all, 5 = Very severe)
Record all the possible causes you can think of.

Causes

Insert New Possible Cause

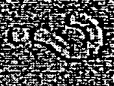
4b. List the causes in chronological order.

You think you've identified the cause of the problem. Click here to test possible causes.
The mouse click is a Next Screen

Previous Screen | Next Screen

Fig. 125

6a How would your situation and change in condition have caused it? Review every combination of conditions and record all the possible causes you can think of.



tions

Changes

Possible Causes

--	--

--

Insert New Cause

7a If you think you've identified the true cause of the problem, click here to test possible causes. Otherwise, click Next Screen.

Notebook

Previous Screen

Next Screen

Fig. 126

09493783-012800

6a How could your changes in combination have caused ? Review every combination of changes. For each combination, record all the possible causes you can think of.

Changes

Possible Causes

Insert New Cause

6b You think you've identified the true cause of the problem. Click here to test possible causes. Otherwise click Next Screen

Notepad

Previous Screen | Next Screen

Fig. 127

094493783-012800

7a How could cause? Record all the possible causes you can think of.



e Causes

Insert New Possible Cause

7b Look for causes in another direction.

Have you or your elimination and change in combination have caused? Review every combination of changes and record all the possible causes you can think of.

Notepad

Previous Screen

Next Screen

Fig. 128

00493783-012800

Insert New Possible Cause

[Previous Screen](#) [Next Screen](#)

Fig. 129



Possible Causes

Insert Nax Possible Cause

Next Screen

[illegible]

How could your observation and change in information have caused? Review every combination of changes and record all the possible causes you can think of.

	Is	Is Not
What object?		
What deviation?		
Where geographically?		
Where on the object?		
When first?		
When since?		
What pattern?		

Possible Causes

Insert New/Is Not Pair

Insert New/Possible Cause

Delete Possible Cause

Fig. 131

00493782-012800

You described when the problem occurred. Now, you'll describe the extent of the problem by completing these steps:

1. Test possible causes against the Problem Specification and record any notes or assumptions.
2. Review your assumptions.
3. Identify the most probable cause.

Fig. 132

09493783.012800

1b) Which cause would you like to test? Select one from the list

123/127

Next Screen

Previous Screen

Next Screen

Fig. 133

09493783-012800

If the cause of does explain but not

Options

- a. Yes it does because
- b. No it does not because
- c. I do not know

Explanations

Insert New Explanation

Yes the cause explains and the items are not

Select an option from the list

Pos
auses

Explanations

Review your assumptions. Are there any other assumptions that you should include? If so, add more.
In addition, review your explanations of "Yes" and "No" to make sure they are accurate.

Insert New Explanation

Insert

Previous Screen

Next Screen

Fig. 135

094493783-012300

3. Which possible cause best explains the detail in your problem specification? Select the one you think is the most probable cause of the problem.

Most Probable Cause	Possible Causes	Explanations
<input type="radio"/>		
<input type="radio"/>		
<input type="radio"/>		
<input type="radio"/>		

126/127

Notepad

Previous Screen

Next Screen

Fig. 136

09493783-012800

You identified the most probable cause of the problem. Now verify that it's the true cause of the problem by following these steps:

1. Record actions needed to verify the true cause.
2. Once the cause has been verified, record the true cause.
3. Examine the cause to see if it has additional ramifications for your object or other objects.
4. Describe how you intend to fix the problem.
5. Examine the fix to find out what other impacts it may have.
6. Assign actions.

Index

Previous Screen

Next Screen

Fig. 137

09493782-012800